OhioEPA
State of Ohio Environmental Protection Agency

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CLOSURE PLAN APPROVAL

CERTIFIED MAIL

Re: ***CLOSURE PLAN***
GMC Delphi Harrison
Thermal Systems (Dayton)
OHD 017 958 604/05-57-0256

January 30, 1997

Mr. Craig Sturtz
Fuller & Henry P.L.L.
2210 Huntington Center
41 South High Street
Columbus, Ohio 43215

Dear Mr. Sturtz:

On September 6, 1988, General Motors Corporation's Delphi Harrison Dayton Facility (GMC-DHDF) submitted to Ohio EPA a facility closure plan for all hazardous waste management units operated at the 300 Taylor Street location in Dayton, Ohio. On December 7, 1989, the Director, in response to GMC-DHDF's submittal, issued a proposed disapproval based upon the agency's determination that the proposed plan failed to comply with Ohio Administrative Code (OAC) Rules 3745-66-11 and 3745-66-12. In response to the proposed action by the Director, GMC-DHDF representatives filed a Request for Adjudication Hearing with the agency, seeking review of the Director's proposed action. As a result of settlement negotiations, a partial closure plan was submitted by GMC-DHDF on July 29, 1996 to address three (3) container storage areas. Subsequent negotiations on the partial closure plan resulted in the journalization of Director's Final Findings & Order on November 25, 1996 (Case No. 90-HW-001).

The partial closure plan was submitted pursuant to Rule(s) 3745-66-12 (and 3745-66-18) of the Ohio Administrative Code (OAC) in order to demonstrate that GMC-DHDF's proposal for partial closure complies with the requirements of OAC Rules 3745-66-11 and 3745-66-12.

The public was given the opportunity to submit written comments regarding the closure, in accordance with OAC Rule 3745-66-12. No comments were received by Ohio EPA in this matter.

Based upon review of GMC-DHDF's July 29, 1996 submittal, I conclude that the partial closure plan to address three (3) hazardous waste container storage areas meets the performance standard contained in OAC Rule 3745-66-11 and complies with the pertinent parts of OAC Rule 3745-66-12.

The closure plan submitted to Ohio EPA on July 19, 1996 by GMC-DHDF representatives is hereby approved.

Please be advised that approval of this partial closure plan does not release GMC-DHDF from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

Notwithstanding compliance with the terms of this partial closure plan, the Director may, on the basis of any information that there is or has been a release of hazardous waste, hazardous constituents, or hazardous substances into the environment, issue an order pursuant to Section 3734.20 et seq of the Revised Code or Chapters 3734 or 6111 of the Revised Code requiring corrective action or such other response as deemed necessary; or initiate appropriate action; or seek any appropriate legal or equitable remedies to abate pollution or contamination or to protect public health or safety or the environment.

Nothing here shall waive the right of the Director to take action beyond the terms of the closure (closure/post-closure) plan pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 ("CERCLA") or to take any other action pursuant to applicable Federal or State law, including but not limited to the right to issue a permit with terms and conditions requiring corrective action pursuant to Chapters 3734 or 6111 of the Revised Code; the right to seek injunctive relief, monetary penalties and punitive damages, to undertake any removal, remedial, and/or response action relating to the facility, and to seek recovery for any costs incurred by the Director in undertaking such actions.

Strict compliance with each and every provision of this approved closure plan, especially including the modifications specified herein, is expected. The Ohio EPA will monitor such compliance. The Director expressly reserves the right to take action, pursuant to Chapters 3734 and 6111 of the Revised Code, and other applicable law, to enforce such compliance and to seek appropriate remedies in the event of noncompliance with the provisions and modifications of this approved closure plan.

You are notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission (ERAC), pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with ERAC. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 236 East Town Street, Room 300, Columbus, Ohio 43266-0557.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent, registered professional engineer licensed to practice in the State of Ohio, that the facility has been closed in accordance with the approved closure plan. The certification by the owner or operator shall include the statement found in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Thomas Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43216-1049.

Sincerely,

Donald R. Schregardus
Director

harradno.app/closures.HO.ao

cc: Tom Crepeau, DHWM Central File, Ohio EPA
Montee Suleiman, DHWM, Ohio EPA
Harriet Croke, USEPA - Region V
Harold O'Connell, SWDO, Ohio EPA
Robert W. Hare, Delphi Chassis Division
John Ridd, Delphi Harrison Thermal Systems

CLOSURE PLAN FOR

HARRISON RADIATOR DIVISION

DAYTON PLANT

GENERAL MOTORS CORPORATION

EPA I.D. No. OHD017958604

August 1988

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FIGURES

CLOSURE PLANS AND FINANCIAL REQUIREMENTS

I-1 CLOSURE PLAN

This closure plan is submitted in response to the requirements of O.A.C. Rule 3745-50-44(A)(13) through (17), and 3745-66-10 through 19, and 40 CFR 270.14(b)(13) through (18), and 265.197 as they address the proper closure of container and tank storage.

General Motors - Harrison Radiator Division, Dayton Plant is located near the intersection of the Mad and Great Miami Rivers in Dayton, Ohio (Figure I-1). The facility develops, manufactures, assembles, and tests automotive air conditioning compressors, accumulator/dehydrators, and miscellaneous air conditioning valves. Hazardous wastes are generated by painting and cleaning parts. Painting air conditioner compressors generates waste paint sludge. Solvents are used to degrease the metal parts. Trichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane were stored in bulk from 1971 to 1973, 1973 to 1982, and 1982 to 1987, respectively. Stoddard solvent has also been used by Harrison Radiator to degrease metal parts.

Harrison Radiator intends to close all six hazardous waste storage areas at the facility. Table I-1 lists these storage areas and the wastes which have been stored in each area.

Building 24 contains a tank storage area (Still Room) consisting of one 3,000-gallon underground tank, two 10,000-gallon underground tanks, and eight 200-gallon above-ground tanks. The underground tanks are enclosed within a concrete vault, serving as secondary containment. The Building 24 tank storage area is shown in Figures I-2, I-3, and I-4.

Over its active life, the 3,000-gallon underground tank (scrap tank) stored the following hazardous wastes: trichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, and Stoddard solvent still bottoms. One 10,000-gallon underground tank (dirty solvent tank) was used to store waste trichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane while the other 10,000-gallon underground tank (Stoddard solvent tank) stored only

TABLE I-1. STORAGE CAPACITY AND EPA HAZARDOUS WASTE NUMBERS FOR EACH STORAGE AREA

Storage area, capacity	EPA hazardous waste numbers of wastes stored
1. Building 24 Tank Storage Area (Still Room)	
° Scrap tank - 3,000-gallon underground tank	F001, D001
° Dirty solvent tank - 10,000-gallon underground tank	F001
° Stoddard solvent tank - 10,000-gallon underground tank	D001
° Stoddard solvent sample tanks - four 200-gallon above-ground tanks	D001
° Chlorinated solvent sample tanks - four 200-gallon above-ground tanks	F001
2. Building 7 Tank Storage Area	
° 10,000-gallon underground tank	D001
3. Building 4 Tank Storage Area	
° Waste oil and solvent still bottom tank - 2,000-gallon above-ground tank	F001, D001
° Waste oil and still bottom tank - 10,000-gallon underground concrete tank	F001, D001
° 200-gallon sump	
4. Building 24 Drum Staging Area	
° Eighty-four 55-gallon drums	D007
5. Building 24 Drum Storage Area	
° Eighty-four 55-gallon drums	D007
6. Building 5 Container Storage Area	
° Forty-eight 55-gallon drums	D001, D002, D003, D005, D007, F001, F005, F011, U210, U044, U228

SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MN GN
3½° 62 MILS
1°48' 32 MILS

UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

DAYTON NORTH, OHIO
N3945—W8407.5/7.5

1965
PHOTOREVISED 1981
DMA 4163 I SW—SERIES V852

Figure I-1. Topographic map.

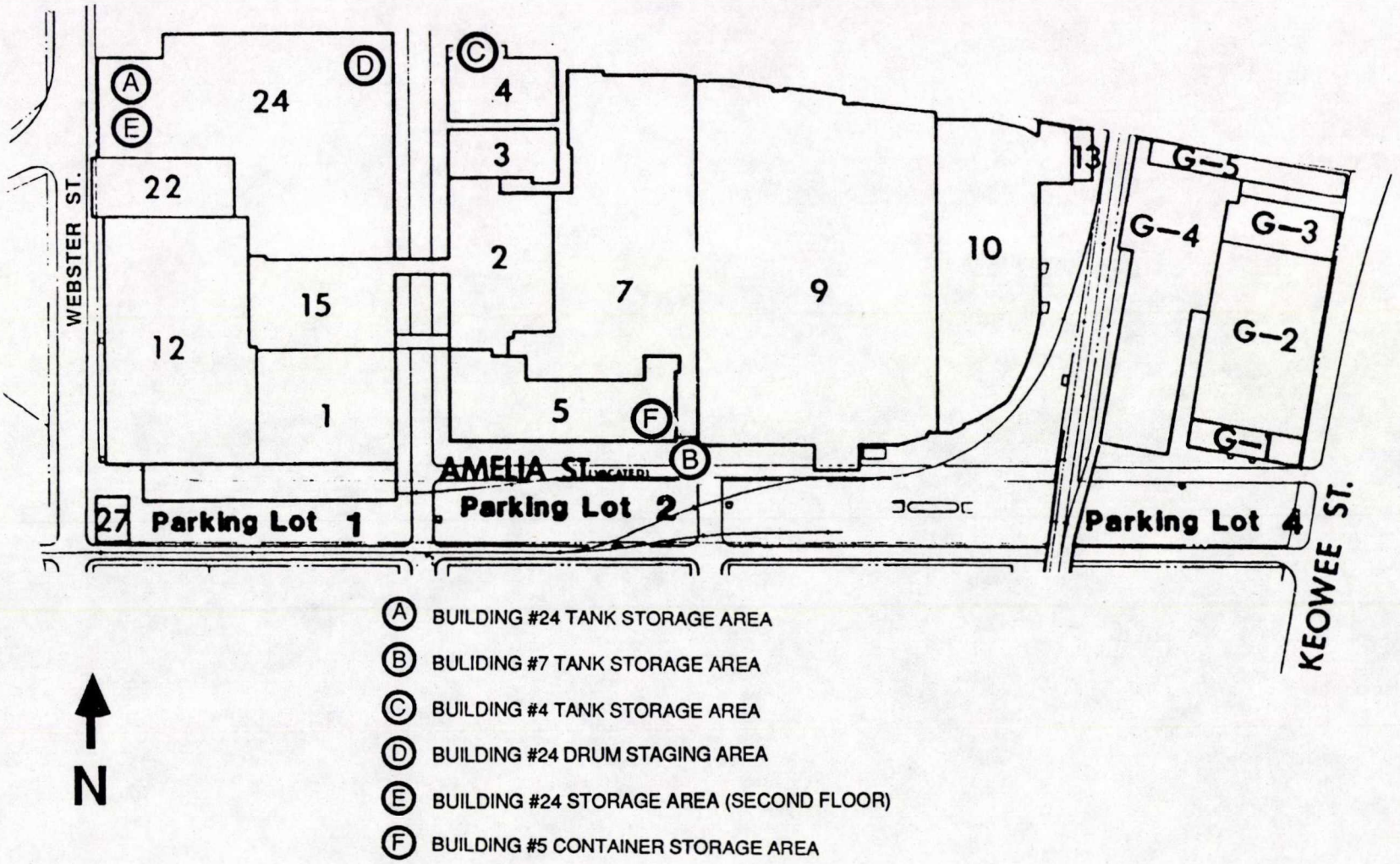


Figure I-2. Storage areas.

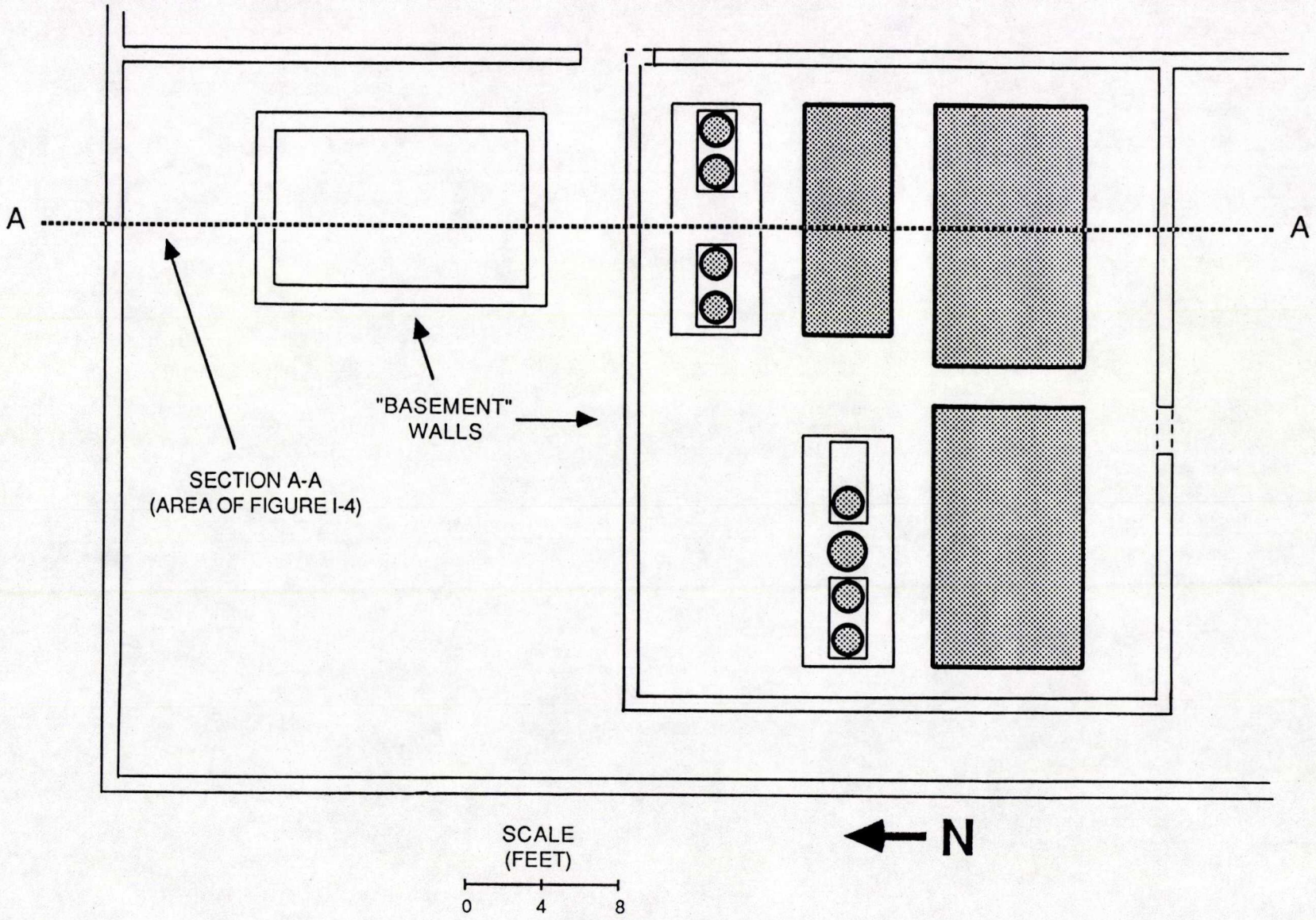
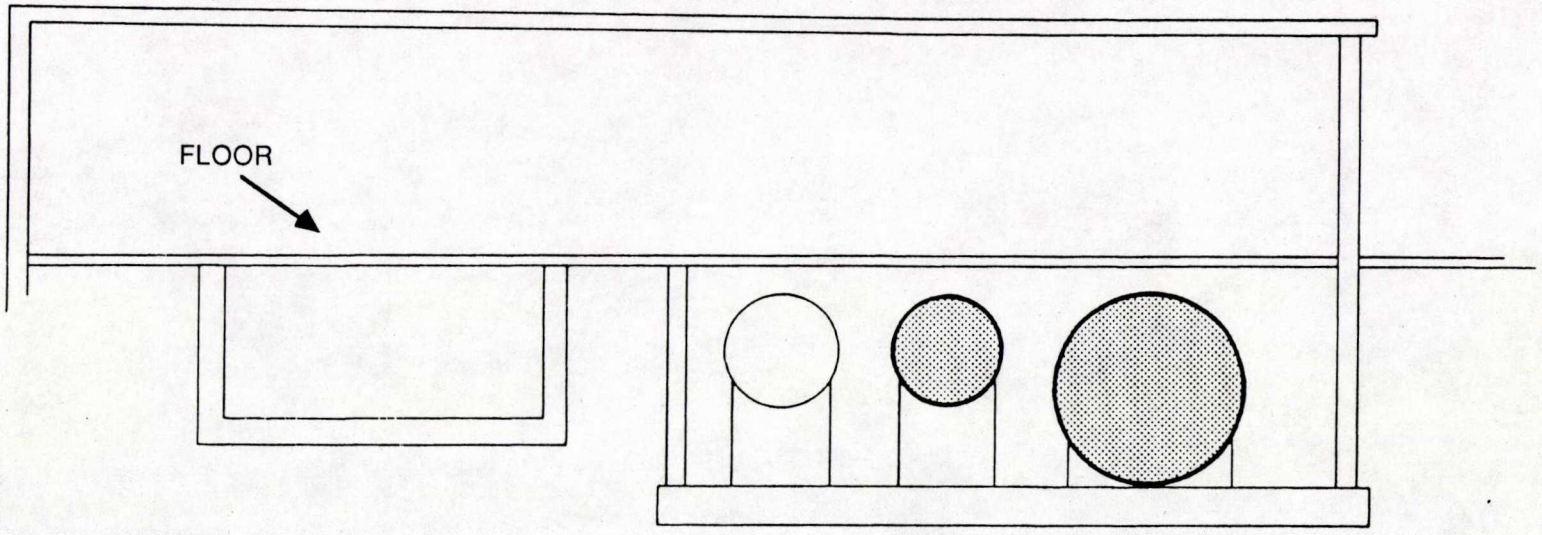


Figure I-3. Building 24 tank storage area. (Still Room)



SCALE
(FEET)

0 4 8

Figure I-4. Building 24 tank storage area. (Still Room, section A-A)

dirty Stoddard solvent. Four 200-gallon above-ground tanks (Stoddard solvent sample tanks) contained clean Stoddard solvent after the distillation process. The four remaining 200-gallon above-ground tanks stored clean trichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane. These chlorinated solvents were transferred to the sample tanks after the distillation process.

The Building 7 tank storage area is shown in Figures I-2 and I-5. A 10,000-gallon underground tank is located in this area. The tank has been used for the storage of waste Stoddard solvent. Stoddard solvent exhibits the characteristic criteria of D001 waste.

Building 4 contains a tank storage area consisting of one 2,000-gallon above-ground fibercast waste tank, an associated 200-gallon concrete sump, and a 10,000-gallon underground concrete spill containment tank. The 2,000-gallon tank and sump are located in a canopy-covered area immediately north of Building 4. The 10,000-gallon tank is only partially covered by the canopy. This area is shown in Figures I-2 and I-6. The 2,000-gallon tank was originally used for storage of waste oils and waste still bottoms from the distillation of tetrachloroethylene, 1,1,1-trichloroethane, and Stoddard solvent, prior to disposal. Since 1983, solvent still bottoms have not been stored in this unit. The 200-gallon sump was used to transfer waste oils from drums into the adjacent waste tank. The 10,000-gallon underground tank was used for emergency spill protection for the waste tank and a gasoline storage, unloading, and transfer area. The 2,000-gallon waste tank contains oily residue with trace amounts of solvents which meet the description of F001 listed waste. The 200-gallon sump and 10,000-gallon interceptor contain oil contaminated water and sludge with trace amounts of the same solvents.

The Building 24 drum staging area is shown in Figures I-2 and I-7. Paint sludge containing hexavalent chromium (D007) is the only hazardous waste that has ever been staged in this area. Initially, the 55-gallon drums are taken to the decanting area. All free liquids are poured off and routed into a floor drain leading to the facility's wastewater pretreatment plant. This drum staging area consists of a concrete floor completely enclosed by Building 24.

Building 24 also contains a drum storage area. Drums stored in this area contain paint sludge without free liquids. The drum storage area is

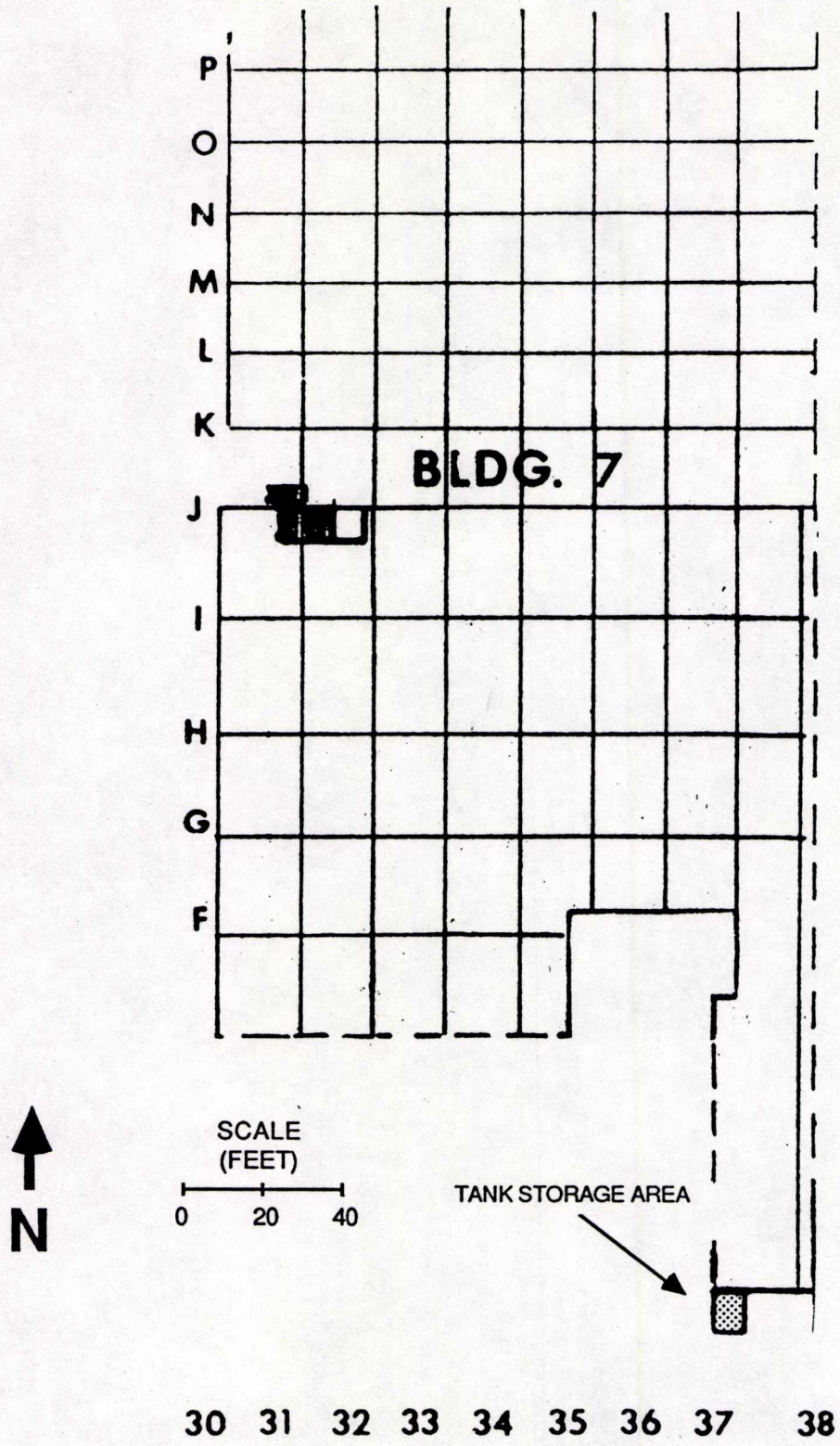


Figure I-5. Building #7 tank storage area.

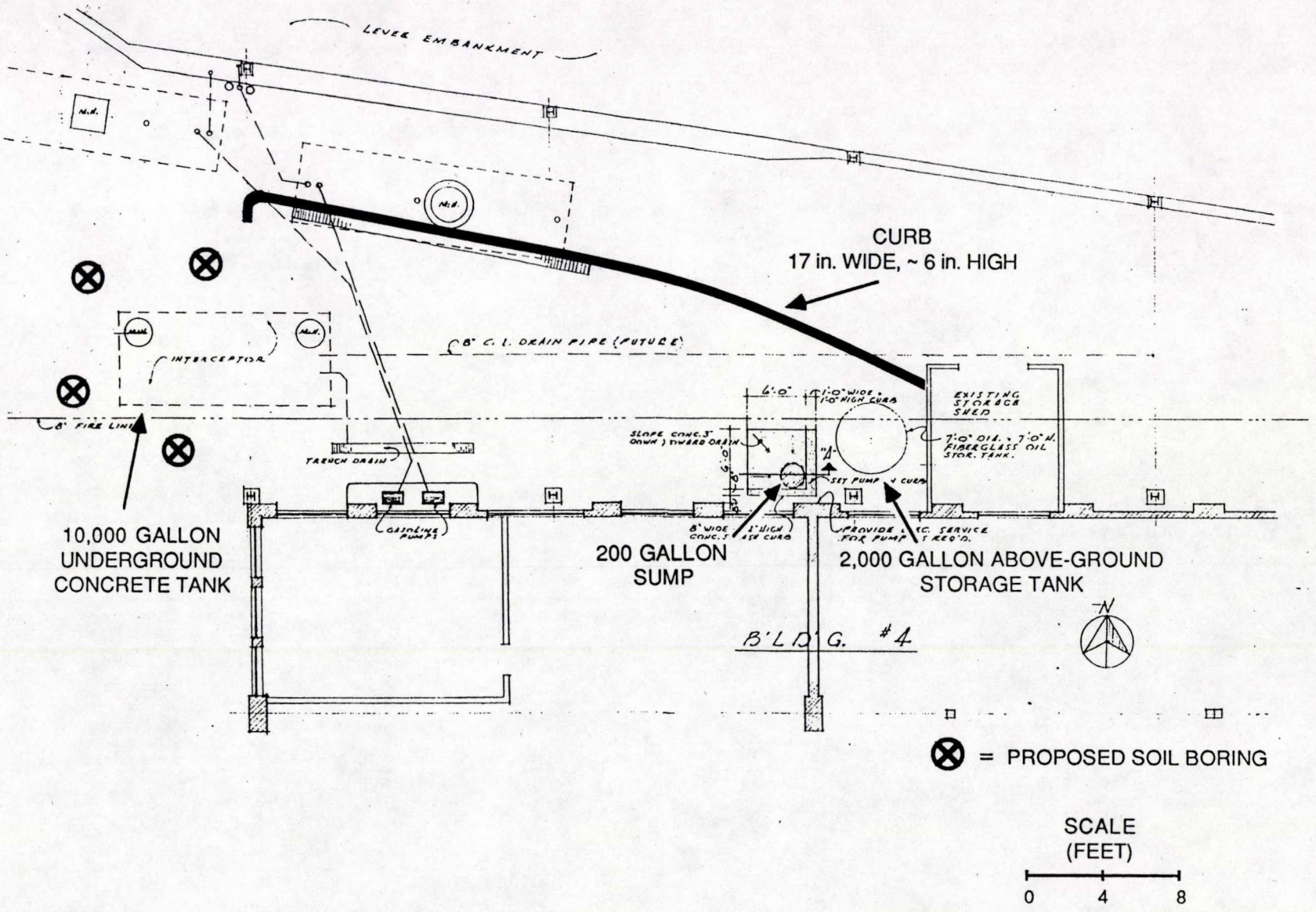


Figure I-6. Building #4 tank storage area.

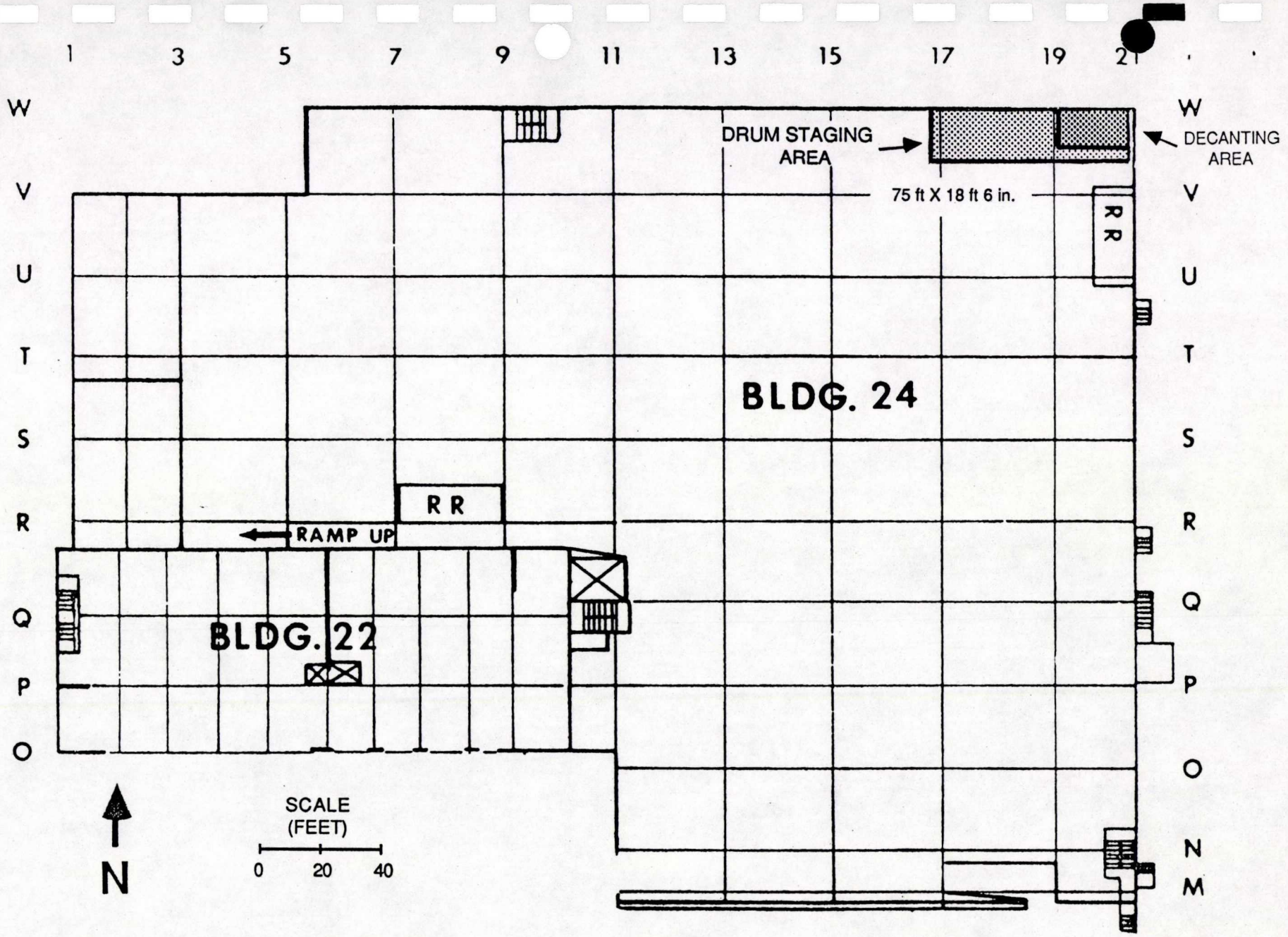


Figure I-7. Building #24 drum staging area.

located on the northwest corner of the building and is shown in Figures I-2 and I-8. The storage area is on the 2nd floor and consists of a concrete floor and is completely enclosed within Building 24.

A miscellaneous hazardous waste container storage area is located in Building 5 (Figures I-2 and I-9). This area consists of a concrete pad surrounded by a locked steel chain link cage. The Building 5 drum storage area was used to store miscellaneous liquid and solid hazardous waste. Over its active life, hazardous waste containing barium, hexavalent chromium, 1,1,1-trichloroethane, tetrachloroethylene, chloroform, trichloroethylene, toluene, cyanide, and ignitable constituents have been stored in this area.

A separate stand-alone closure plan has been written for each of these waste storage areas. Each closure plan identifies the steps necessary to completely close each area.

Certain tasks such as notification of Ohio EPA prior to beginning of closure, inventory removals, inspections, and closure certifications may be completed concurrently without adversely affecting the facility's ability to meet the closure performance standards.

Harrison Radiator will maintain a copy of the approved closure plans and all revisions to the plans on site. Harrison Radiator will notify Ohio EPA to the extent possible, of its intent to begin closure at least 180 days prior to the start date. Upon completion of closure, Harrison Radiator will submit to Ohio EPA a certification from both the owner and an independent registered professional engineer that the waste management area has been closed in accordance with the approved closure plan. The Professional Engineer will include in the certification an explanation of any testing and analysis performed, all activities conducted, and adequate documentation of the inspections. Closure adequacy will be evaluated by the engineer using criteria discussed in each waste storage area closure plan.

Each closure plan is designed to ensure that the waste storage area will not require further maintenance and controls; will eliminate the need for post-closure activity; and will minimize the release of hazardous waste, leachate, and contaminated rainfall to the air, ground water, surface water, and surrounding land. It is Harrison Radiator's intent to utilize best management practices to minimize spills and releases throughout the life of the facility. Good housekeeping will be continuously emphasized, and thus, closure activities are simplified to the extent practicable.

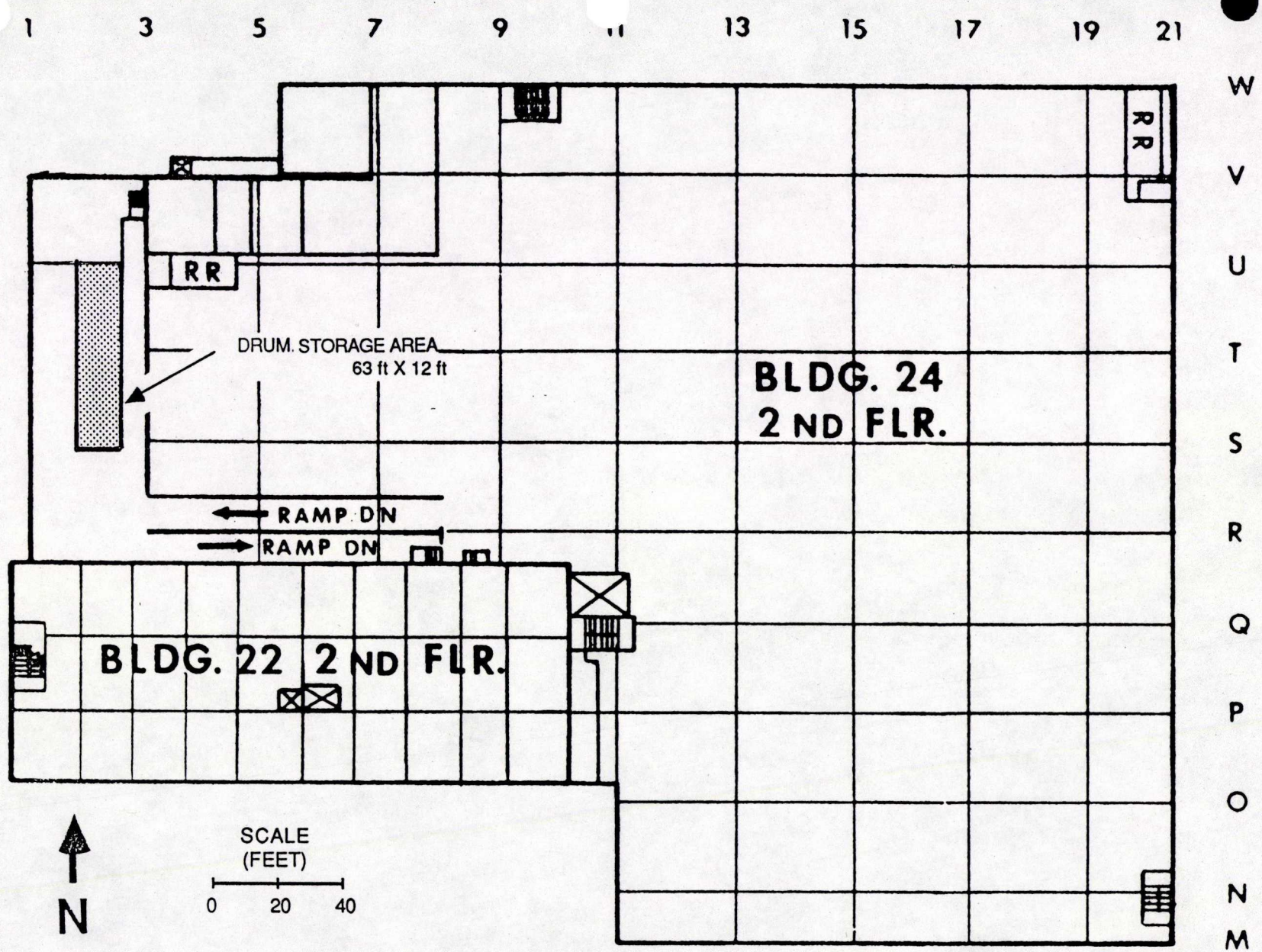


Figure I-8. Building #24 drum storage area.

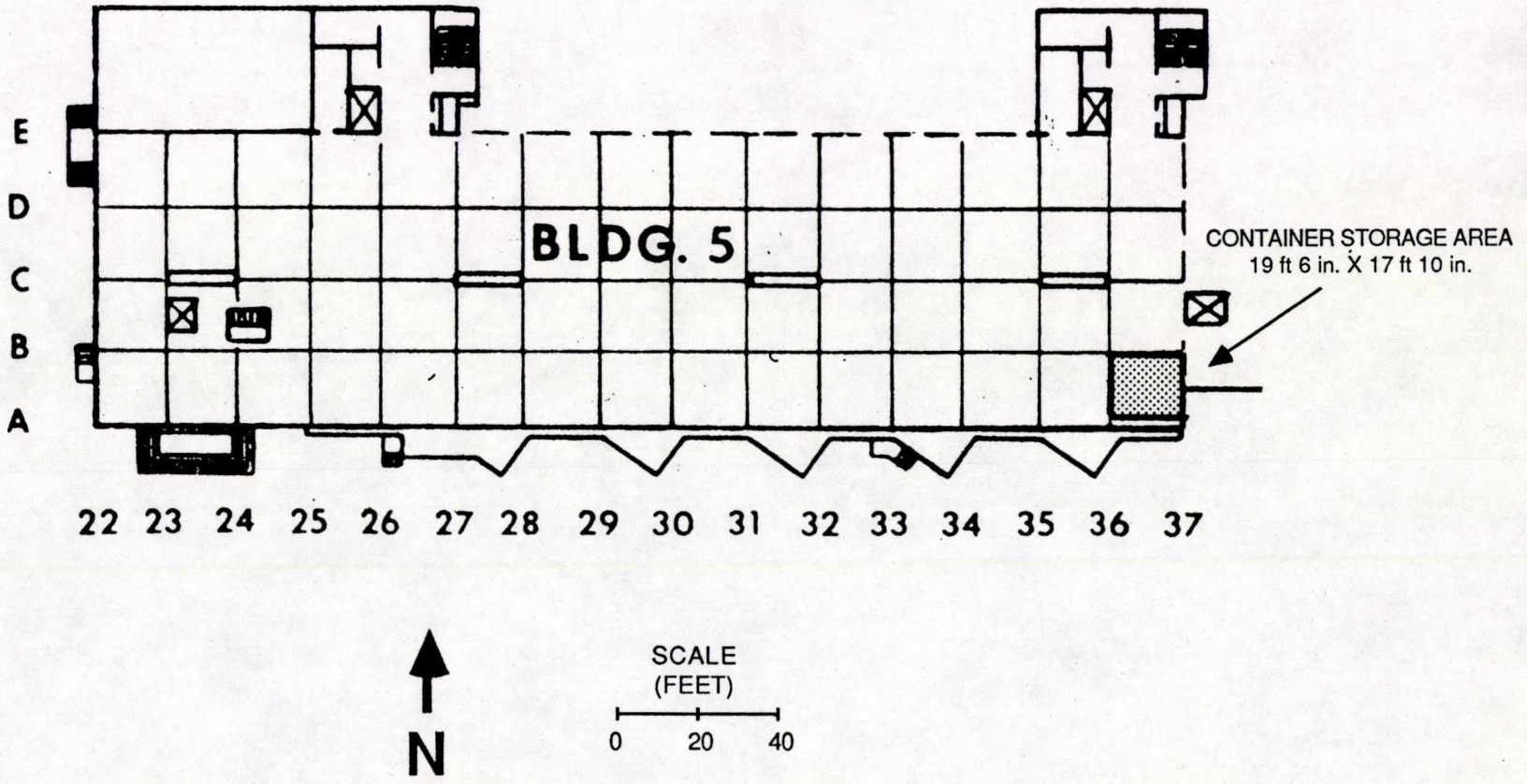


Figure I-9. Building 5 container storage area.

Detailed descriptions of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures and soils during partial or final closure are included in the plans. Each plan describes the necessary actions when the extent of operations would make closure the most difficult and costly. Basic assumptions include:

- Third-party operators will implement the closure plans.
- Major on-site equipment and structures will be functional.
- Necessary off-site RCRA disposal facilities are within 250 miles.
- Catastrophic release causing widespread contamination has not occurred.
- Operating records delineating the contents of the waste storage areas are available.

Partial closure of each waste storage area is not anticipated. However, implementation of any of the closure plans will allow partial closure. All contaminated equipment, structures, soils, and residues will be properly disposed of in a RCRA authorized facility.

Table I-2 delineates the maximum inventory for each waste management area. The determination of the maximum inventory has taken into consideration management's intended operating practices; such things as restricted drum stacking heights and unit dimensions were all considered.

Each closure plan includes a detailed description of the sampling and analytical activities necessary to ensure that the closure performance standards has been met.

Each closure plan includes a schedule for closing the active waste storage area. Harrison Radiator intends to close these areas immediately after proper approval is obtained.

I-1a Closure Plan for Building 24 Tank Storage Area (Still Room)

I-1a(1) Closure Performance Standard

This closure plan is designed to ensure that the underground and aboveground tanks located in the Building 24 tank storage area will be closed in such a manner that further maintenance and controls are minimized or eliminated to the extent necessary to prevent threats to human health and the

TABLE I-2. MAXIMUM WASTE INVENTORY FOR ACTIVE WASTE STORAGE AREAS

Waste storage area	Maximum capacity, gallons	Notes
1. Building 24 Tank Storage	24,600	Two 10,000-gallon tanks One 3,000-gallon tank Eight 200-gallon tanks
2. Building 7 Tank Storage	10,000	One 10,000-gallon tank
3. Building 4 Tank Storage	12,000	One 10,000-gallon tank One 2,000-gallon tank One 200-gallon sump
4. Building 24 Drum Staging Area	4,620	Eighty-four 55-gallon drums
5. Building 24 Drum Storage Area	4,620	Eighty-four 55-gallon drums
6. Building 5 Drum Storage	2,640	Forty-eight 55-gallon drums

environment, and to prevent post closure escape of hazardous waste, leachate, contaminated runoff, or hazardous waste decomposition products to the ground water, atmosphere, or soils.

I-1a(2) Partial Closure and Final Closure Activities

The Harrison Radiator Division does not anticipate partial closure of the tank storage area.

Figures I-2, I-3, and I-4 show those underground and above-ground tanks that are planned for closure. Incompatible wastes are not stored in this storage area. As noted on Figures I-3 and I-4, all underground tanks that are planned for closure are enclosed in a vault or secondary containment. The maximum extent of operations during the active life of the underground and above-ground tanks planned for closure includes:

- One 3000-gallon underground tank for a total of 3000 gallons.
- Two 10,000-gallon underground tanks for a total of 20,000 gallons.
- Eight 200-gallon above-ground tanks for a total of 1600 gallons.
- The operating record delineating the contents of the tanks.

I-1a(3) Maximum Waste Inventory

The maximum waste inventory for the tanks that are planned to be closed in the Still Room at any given time during the operating life of the facility includes three underground tanks and eight above-ground tanks for a total capacity of 24,600 gallons.

Each tank will have been labeled and entered into the records of the Plant Engineering Department. These records, along with information already available in the Plant Engineering Department, provide information necessary for proper handling and processing. Liquids and wastes stored in tanks planned for closure include D001 and F001. Unless otherwise specified, the liquids or solvents that were stored in the aforementioned tanks were trichloroethylene from 1971 to 1973, tetrachloroethylene from 1973 to 1982, and 1,1,1-trichloroethane from 1982 to 1987. The 3000-gallon tank was dedicated to storing solvent still bottoms (F001 and D001), one of the 10,000-gallon

tanks was dedicated to storing dirty chlorinated solvent (F001) while the other 10,000 gallon tank was dedicated to storing dirty Stoddard solvent (D001). Four of the eight 200-gallon tanks were committed to storing clean chlorinated solvent, while the remaining four held clean Stoddard solvent. Prior to implementation of closure operations, the project manager will determine which wastes are in inventory and utilize the standard operating procedures to arrange for their transportation and appropriate disposal.

I-1a(4) Schedule for Closure

Partial closure of the tank storage area is not anticipated. However, implementation of this plan will allow partial closure of the storage area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received Agency approval. The proposed schedule for closure is shown in Figure I-10. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third-party operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1a(5) Inventory Disposal, Removal, or Decontamination of Equipment

Prior to initiation of this closure plan, all stored wastes in the tanks will have been transported and disposed of by the manager. The hazardous wastes will be transported off-site for recycle or disposal at RCRA-approved hazardous waste facilities.

Following removal of the wastes and upon initiation of the closure plan, the inside and outside of the eight above-ground solvent tanks will be high-pressure cleaned with hot, soapy water and rinsed three times with high-pressure hot water. A representative sample of the final rinse solution from each tank will be collected and analyzed for the compounds listed below. Decontamination procedures will be repeated, if necessary, until there is no more than 1 mg/liter of indicator constituents present in the rinseate as is referenced in the State Closure Plan Review Guidance Document. The analytical methods and acceptable concentrations listed below will be used:

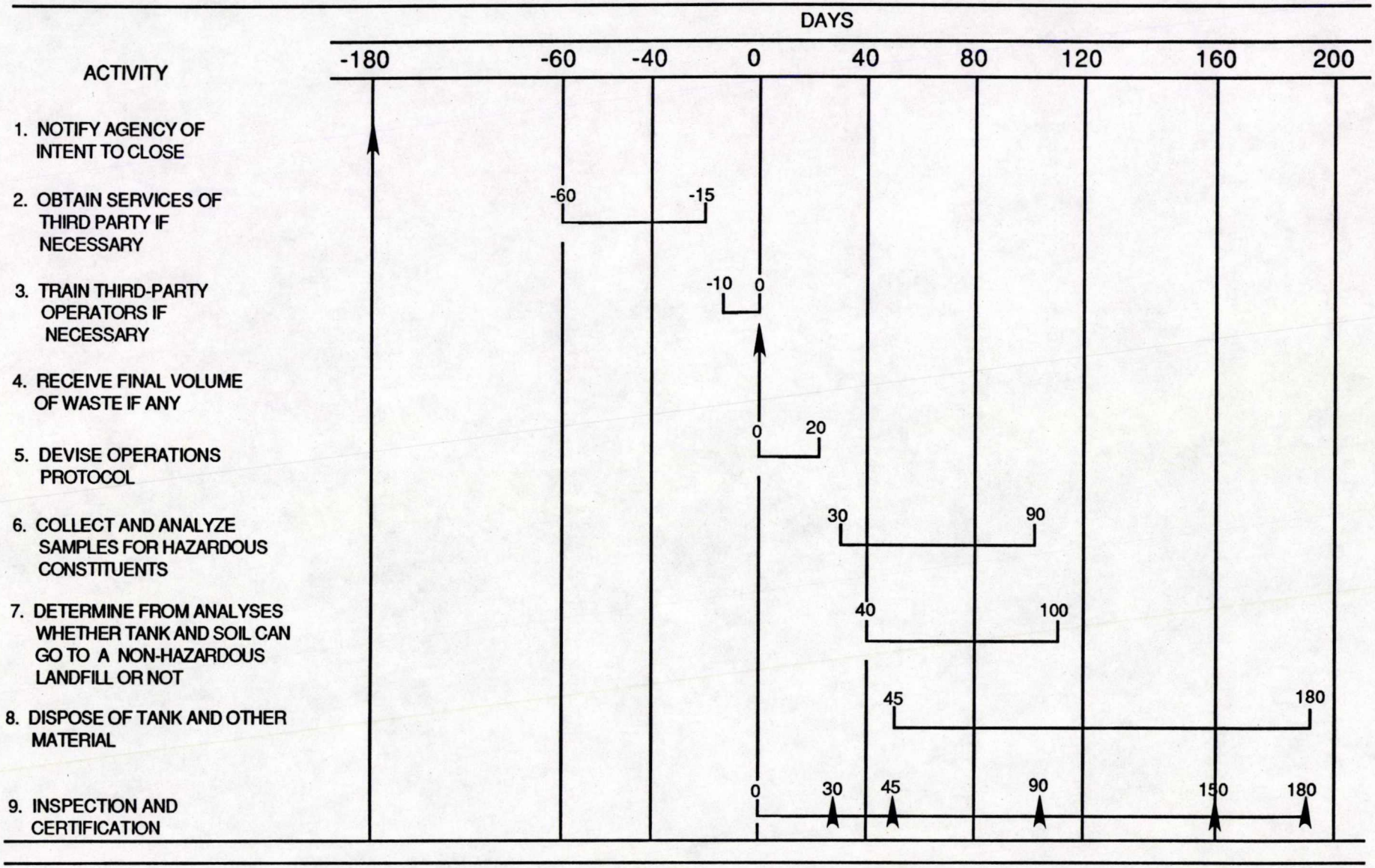


Figure I-10. Closure schedule for Building 24 tank storage area.

Analysis	Analytical method*	Acceptable concentration
Flash point	1010 or 1020	>140°F
Volatile organics		
Perchloroethylene	8240	1 mg/liter
Trichloroethylene	8240	1 mg/liter
1,1,1-Trichloroethane	8240	1 mg/liter

* Test Methods for Evaluating Solid Wastes. Physical/Chemical Methods. (SW-846), U.S. EPA, November 1986, 3d Edition.

The tanks will be high-pressure cleaned with hot, soapy water and rinsed with hot water at least three times. A representative sample of the final rinse solution from each tank will be collected and analyzed for the compounds listed above. Decontamination procedures will be repeated, if necessary, until there is no more than 1 mg/liter of indicator constituents present in the rinseate, as is referenced in the State Closure Plan Review Guidance Document. The analytical methods and acceptable concentrations listed above will be used. The concrete floor covering the 3000-gallon tank and two 10,000-gallon tanks will then be dug up and removed. The soil surrounding the tanks as well as the tanks will also be excavated and removed. All soil and concrete will be disposed of at a RCRA-regulated facility. Once clean closure is achieved, the tanks will be cut into manageable pieces and removed. If necessary the tank pieces will be decontaminated using the same procedures described for the inside of the tanks.

Following removal of the soil and tanks, the concrete vault will be high-pressure cleaned with hot, soapy water and rinsed at least three times. A representative sample of the final rinse solution will be collected and analyzed for the compounds listed above. Decontamination procedures will be repeated, if necessary, until there is no more than 1 mg/liter of indicator constituents present in the rinseate, as is referenced in the State Closure Plan Review Guidance Document. The analytical methods and acceptable concentrations listed above for tank decontamination will be used. The walls and floor of the vault will be inspected for cracks and gaps to verify integrity.

All wash water and rinse solutions will be collected in a vacuum truck and then transferred to the facility's wastewater pretreatment plant. All contaminated cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at a RCRA-regulated facility.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 7870 gallons of wash and rinse water will be generated during the closure of the tanks in the Still Room.

The following equipment will be necessary to successfully close the Building 24 tank storage area:

- Brooms and scoops
- Personal protection devices and clothing
- Vacuum truck
- High-pressure hoses
- Safety equipment
- Forklift
- Backhoe
- Air compressor
- Air hammers
- Concrete saws
- Cutting torch
- Miscellaneous hand tools
- Sampling devices
- Detergent

I-1b Closure Plan for Building 7 Tank Storage Area

I-1b(1) Closure Performance Standard

This closure plan is designed to ensure that the underground tank located in Building 7 will be closed in such a manner that further maintenance and controls are minimized or eliminated to the extent necessary to prevent threats to human health and the environment, and to prevent post closure escape of hazardous waste, leachate, contaminated runoff or hazardous waste decomposition products to the ground water, atmosphere, or soils.

I-1b(2) Partial Closure and Final Closure Activities

The Harrison Radiator Division does not anticipate partial closure of the underground tank in Building 7.

Figures I-2 and I-5 show the underground tank that is planned for closure. Incompatible wastes are not stored in this storage area. The maximum extent of operations during the active life of this underground tank planned for closure includes:

- One 10,000-gallon underground tank for a total of 10,000 gallons.
- The operating record delineating the contents of the tanks.

I-1b(3) Maximum Waste Inventory

The maximum waste inventory for the tank that is planned to be closed in Building 7 at any given time during the operating life of the facility is 10,000 gallons.

This tank will have been labeled and entered into the records of the Plant Engineering Department. These records, along with the information already available in the Plant Engineering Department provide the information necessary for proper handling and processing. The only waste stored in the tank planned for closure is characteristically ignitable (D001). Unless otherwise specified, the only solvent stored in this tank was spent Stoddard solvent. Prior to implementation of closure operations the project manager will determine the volume of wastes in inventory and utilize the standard operating procedures to arrange for their transportation and appropriate disposal.

I-1b(4) Schedule for Closure

Partial closure of the tank storage area is not anticipated. However, implementation of this plan will allow partial closure of the storage area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received Agency approval. The proposed schedule for closure is shown in Figure I-11. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third-party operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1b(5) Inventory Disposal, Removal, or Decontamination of Equipment

Prior to initiation of this closure plan all stored wastes in the tank will have been transported and disposed of by the manager. The hazardous waste will be transported off-site for recycle or disposal at a RCRA approved hazardous waste facility.

Following removal of the waste and upon initiation of the closure plan, the tank will undergo a leak test, which meets the standards outlined in 40 CFR 265.191(b)(5), to determine the historical integrity of the tank. If the tank passes the leak test, it will be closed in place (i.e., cleaned with

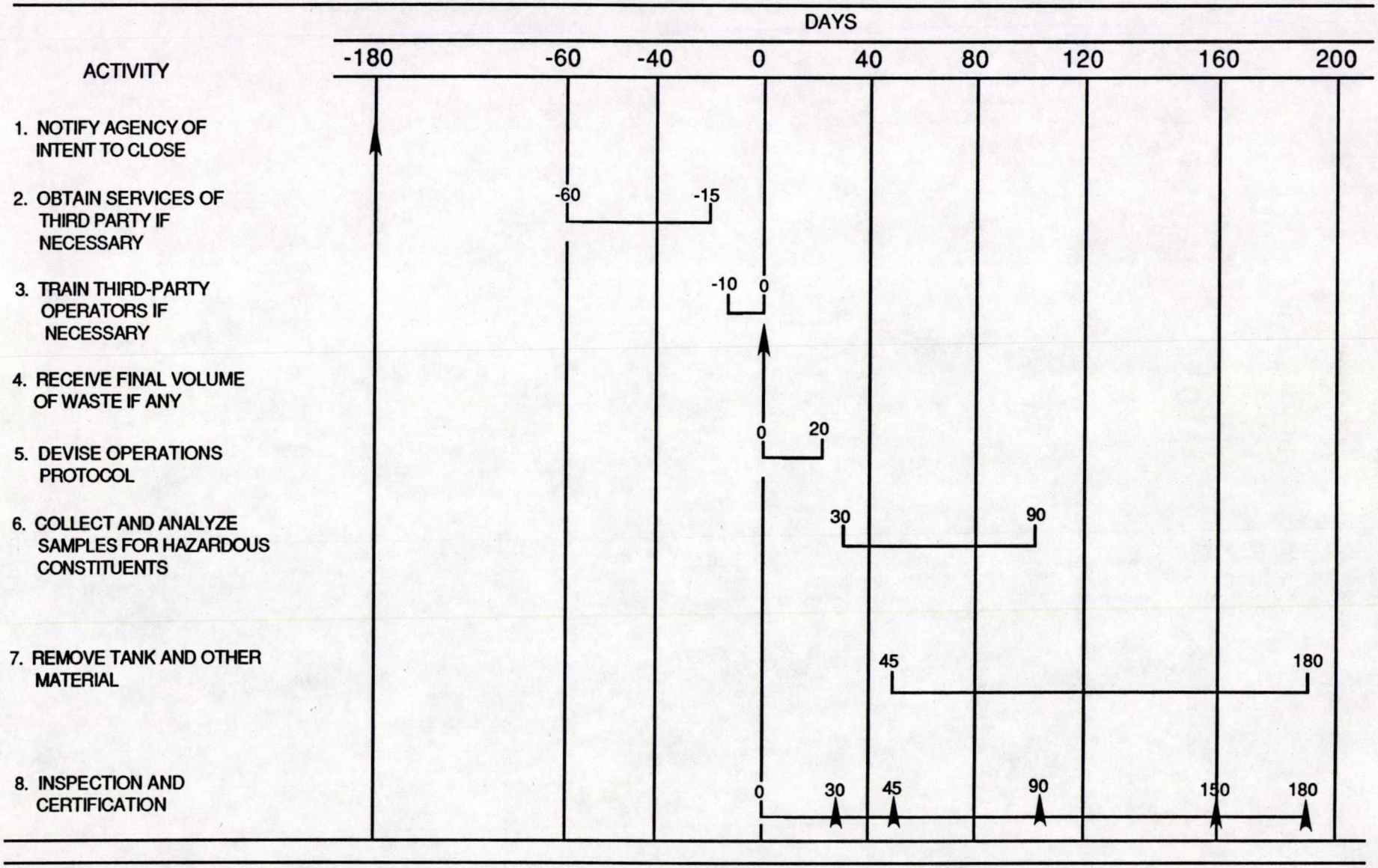


Figure I-11. Closure schedule for Building 7 tank storage area.

hot, soapy water, rinsed three times, filled with sand, and plugged with concrete). This method of closure is preferred because the tank lies underground and is at least partially directly beneath Building 7. Excavation of the tank will disturb the foundation of Building 7. Harrison Radiator believes that excavation of the tank is unwarranted if it passes the leak test. If the tank does not pass the leak test, the inside of the tank will be high-pressure cleaned with hot soapy water and rinsed three times with high pressure hot water. A representative samples of the final rinse solution from the tank (whether it passes the leak test or not) will be collected and analyzed as listed below. Decontamination procedures will be repeated, if necessary, until the flash point of the rinseate is >140°F as is referenced in the State Closure Plan Review Guidance Document. The analytical methods and acceptable levels listed below will be used:

Analysis	Analytical method*	Acceptable level
Flash point	1010 or 1020	>140°F

* Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. November 1986, 3rd Edition, U.S. EPA SW-846.

All wash water and rinse solutions will be collected in a vacuum truck and taken to the Harrison-Dayton wastewater pretreatment system for treatment and disposal. All contaminated cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at a RCRA regulated facility.

Once the decontamination procedures have produced an acceptable level in the final rinseate, the tank will either be filled and closed in place (if it passes the leak test) or excavated and disposed of.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 2500 gallons of wash and rinse water will be generated during the closure of the Building 7 tank storage area.

The following equipment will be necessary to successfully close the Building 7 tank storage area.

- Brooms and scoops
- Personal protection devices and clothing
- Vacuum truck
- High-pressure hoses
- Safety equipment
- Forklift
- Backhoe
- Sampling devices
- Detergent

I-1b(6) Soil Survey and Removal

If the tank fails the leak test, a soil survey will be conducted to determine the extent, if any, of soil contamination. Four soil borings are proposed around the tank. The four borings will be sampled at the 10-foot depth.

The borings will be drilled using an auger drilling rig and conventional 4½-inch-i.d. hollow-stem augers. Soil samples will be collected at the specified depths using a 2-inch-diameter, 2-foot-long split-spoon sampling device.

After decontaminating the sampling device by: 1) tap water rinse, 2) deionized water rinse, 3) dilute hydrochloric acid rinse, 4) deionized water rinse, 5) methanol, and 6) deionized water rinse, the drill rods will be attached to the split-spoon and will be positioned at the desired sampling depth. The split-spoon will be driven the necessary distance using the sliding hammer or other suitable power. Following the removal of the split-spoon from the ground and opening it, the sample will be cut with a decontaminated knife such that lengths sufficient to provide approximately 100 grams of sample per sample container will be produced. The soil sample will then be placed in an appropriately labeled sample container, the container placed in a cooler and recorded into both the field data book and the chain-of-custody record. This process will be repeated until all samples have been obtained from all sampling locations.

One 4-ounce, wide-mouth glass jar will be used to contain the sample aliquot for analysis.

The analytical methods and acceptable concentrations listed below will be used on all soil samples:

Analysis	Analytical method*	Acceptable level
Flash point	1010 or 1020	>140°F

* Methods for Chemical Analyses of Water and Waste, EPA-600/4-79-020, April 1979.

The sample containers will be labeled to include sample location, depth, date and time, person collecting the sample, and any other pertinent information.

Chain-of-custody seals will be placed on all sample-shipping containers (coolers) prior to shipment. The seal numbers will be recorded in the field log book. Upon receipt of the samples, the laboratory sample custodian will inspect and record the integrity of the seal and seal number. The seal number will be verified with the field log book. Any discrepancies will be documented in the laboratory and facility files. Standard QA/QC data (i.e., blanks, spikes, etc.) will be reported with the results.

If the analytical results of the soil surrounding the tank show contamination above the accepted level, Harrison Radiator intends to excavate and dispose of all contaminated soil at a RCRA-regulated facility. However, if the soil has been contaminated to the extent that all contaminated soils cannot be practically removed or decontaminated, the contingent closure and post-closure plan will be implemented.

I-1b(7) Contingent Closure Plan

In the event clean closure cannot be accomplished, this contingent closure plan will be implemented and the Building 7 10,000-gallon underground tank will be closed in place as a landfill. This section is submitted in response to the requirements of O.A.C. 3745-67-28 and 40 CFR 265.197(b).

This contingent closure plan identifies all steps that will be necessary to close the storage unit at the end of its operating life. The contingent post-closure plan provides for thirty years of post-closure care, consisting of maintenance and monitoring.

Harrison Radiator will maintain a copy of the approved contingent closure and contingent post-closure plan and all revisions to each plan on site until certification of closure completeness has been submitted and accepted by Ohio's Environmental Protection Agency (OEPA) and the U.S. Environmental Protection Agency (U.S. EPA). Harrison Radiator will notify the agencies at least 180 days prior to the date final closure is expected to begin. Upon completion of either closure or contingent closure, Harrison Radiator will submit to the Director of OEPA and the Region V U.S. EPA Administrator certification by both a representative of Harrison Radiator and an independent registered professional engineer that the facility unit has been closed in accordance with the provisions of either of the approved closure plans. Harrison Radiator intends to implement clean closure as the first option.

Harrison Radiator stores characteristically ignitable (D001) waste Stoddard solvent in the 10,000 gallon storage tank at Building 7. If, after implementation of the closure plan, contamination is above accepted levels in the soil surrounding the tank, and not all contaminated soils can be practically removed or decontaminated, this contingent closure plan will be implemented.

I-1(b)7(a) Closure Performance Standard

This contingent closure plan is designed to ensure that in the event clean closure of the underground storage tank at Building 7 cannot be accomplished, the wastes left in place as a landfill will be managed in such a manner that eliminates threats to human health or the environment and post-closure escape of hazardous waste, leachate, contaminated runoff or hazardous waste decomposition products to the groundwater, surface water, soils, or air.

I-1(b)7(b) Partial Closure Activities

Partial closure is not anticipated for this unit. Any wastes left in place as a landfill will be closed as described in this plan.

I-1(b)7(c) Maximum Waste Inventory

As specified in the closure plan, all D001 waste from this storage unit will be withdrawn and disposed of at approved RCRA regulated disposal facilities. Therefore, should Harrison Radiator implement this contingent closure

plan, all wastes will have already been removed to the extent practicable. The maximum waste inventory would then be the residual waste level left within the soil surrounding the tank. The maximum waste inventory is therefore unknown at this time.

I-1(b)7(d) Inventory Removal, Disposal of Contaminated Equipment

Inventory removal and disposal of contaminated equipment will be performed as specified in Harrison Radiator's closure plan. The tank, ancillary equipment, and appurtenances will be decontaminated prior to implementation of this contingent closure plan. Hazardous wastes that cannot be removed will be closed in place as a landfill.

I-1(b)7(e) Closure of Disposal Units

If Harrison Radiator cannot accomplish clean closure as outlined in the closure plan, contaminated soils will be left in place. Ground-water monitoring and reporting will be implemented. Installation of a "cap" or final cover to preclude the leaching of hazardous wastes or waste constituents through soils and into ground water will also be implemented.

I-1(b)7(f) Cover Design

Harrison Radiator intends to use the existing concrete above the tank as a cap or final cover. All holes in the concrete remaining from soil borings will be filled. In the event that large cracks or gaps are present in the existing concrete, a Type K concrete cap cover will be placed over the existing storage tank and surrounding area. The design of the final cover will be such that precipitation will not permeate the cover, precluding the leaching of wastes or waste constituents into ground water.

The basic function of the cap system is to provide a long-term barrier, minimizing migration of contaminants off-site. The Type K cover will be designed to be as maintenance-free as possible and to minimize shrinkage and cracking. Water stops and water-tight expansion material will be used in all construction and expansion/construction joints. An appropriate sub-base will be used to minimize settlement.

The concrete cover will be reinforced and at least six inches thick. A non-slip seal coat on top of the concrete layer will be applied to prevent possible spalling and cracking due to environmental conditions.

The cap will have the following design criteria: 1) it would be able to support tanks and heavy equipment used at Harrison Radiator, 2) the hydraulic conductivity of the cap will be less than 1×10^{-7} cm/s, and 3) the cap will be sloped to provide drainage for run-on and run-off.

I-1(b)7(g) Minimization of Liquid Migration

All liquid wastes will be removed as specified in the closure plan. Therefore, liquid wastes will not be present within this storage unit. Precipitation, run-on, and run-off migration is eliminated by using the concrete cover as an impermeable cap. The cap will preclude the migration of liquids into the waste disposal area.

I-1(b)7(h) Maintenance Needs

The concrete cap will act as a final cover, and maintenance needs will be minimized by using the design criteria list in Section I-1(b)7(f).

I-1(b)7(i) Drainage and Erosion

Cover erosion will not occur at this facility unit, as the concrete cap is impervious to precipitation, run-on, and run-off. Drainage into the soils under the cap will not occur. Because drainage into the soils will not occur, drainage layer clogging will not occur.

I-1(b)7(j) Settlement and Subsidence

The concrete cap will be designed such that settlement and subsidence will be minimized or eliminated.

I-1(b)7(k) Cover Permeability

The concrete cap will be impervious to rainfall and other forms of precipitation. The design of the cap is such that the hydraulic conductivity of the concrete will be less than 1×10^{-7} cm/s.

I-1(b)7(l) Freeze-Thaw Effects

The average depth of frost penetration in this area is approximately 32 inches. Freezing and thawing should not adversely effect the concrete cover. If freezing and thawing adversely effects the concrete cover, remedial measures will be taken immediately after the discovery of any defect.

I-1(b)7(m) Schedule for Closure

Contingent closure will begin within 30 days of determining whether implementation of this contingent closure plan is necessary. The proposed schedule for contingent closure is shown in Figure I-12.

I-1(b)7(n) Extension for Closure Time

Harrison Radiator does not request an extension for closure time.

I-1c Closure Plan for Building 4 Tank Storage Area

I-1c(1) Closure Plan Performance Standard

This closure plan is designed to ensure that the Building 4 tank storage area will be closed in such a manner that further maintenance and controls are minimized or eliminated to prevent threats to human health and the environment, and to prevent post closure escape of hazardous waste, leachate, contaminated runoff or hazardous waste decomposition products to the ground water, surface water, atmosphere, or soils.

I-1c(2) Partial Closure and Final Closure Activities

Harrison Radiator does not anticipate partial closure of the tank storage area. However, the procedures described herein will allow management to partially close the area if deemed appropriate.

The tank storage area consists of a concrete pad with a concrete containment curb, a 200-gallon sump, a 2,000-gallon above-ground tank, and a 10,000-gallon underground concrete tank (Figures I-2 and I-6). The concrete pad is sloped to a drain so that any spills will be collected in the underground concrete tank. The maximum extent of operations during the active life of the storage area includes:

- One 2,000-gallon above-ground tank, one 200-gallon sump, and one 10,000-gallon underground tank for a total of 12,200 gallons.
- The operating record delineating the contents of the tank.

I-1c(3) Maximum Waste Inventory

The maximum waste inventory in the tank storage area at any given time during the operating life of the facility includes two tanks and one sump for a capacity of 12,200 gallons.

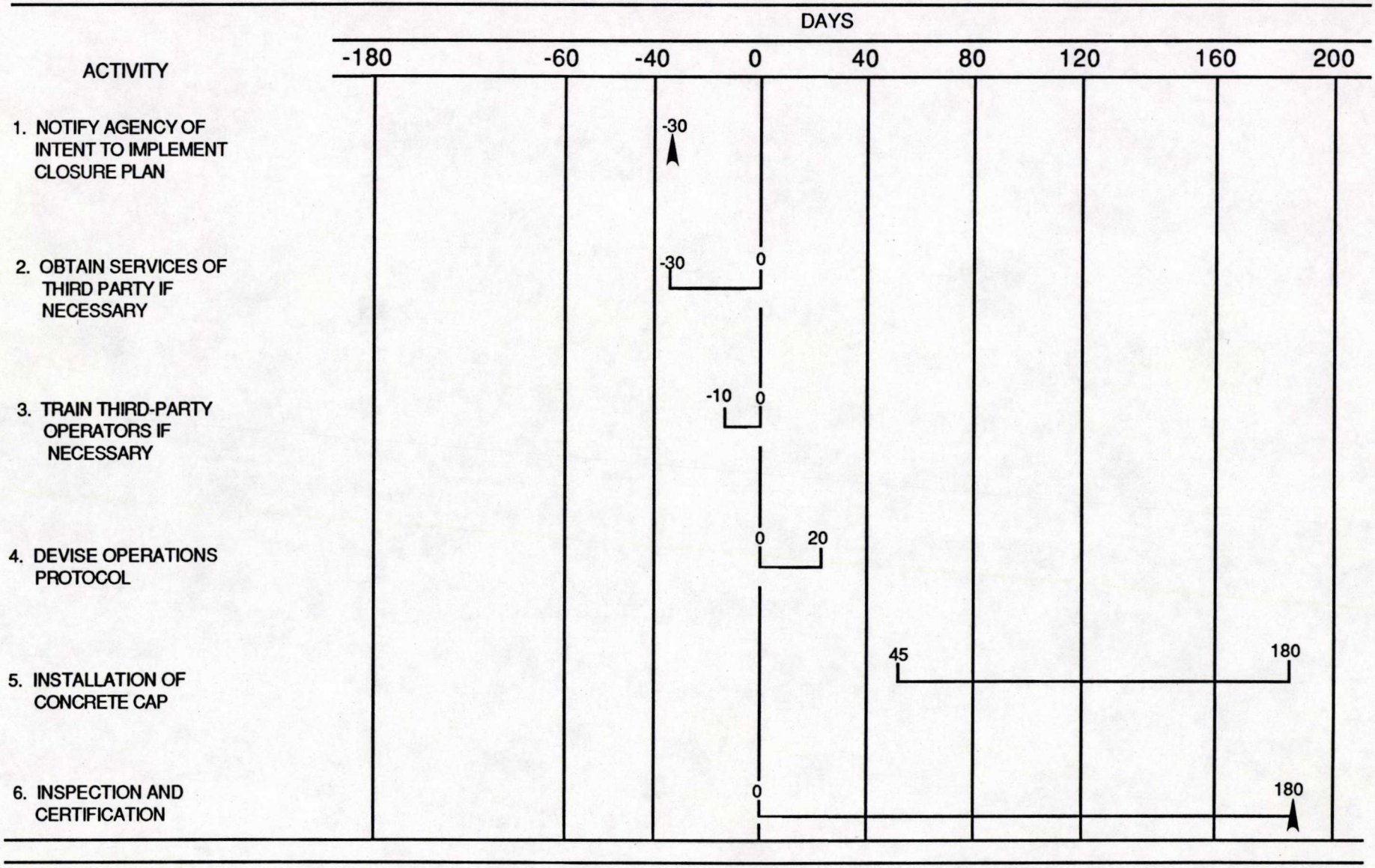


Figure I-12. Contingent closure schedule for Building 7 tank storage area.

These tanks are labeled and entered into the records of the Plant Engineering Department. These records, along with the information already available in the Plant Engineering Department, provide the information necessary for proper handling and processing. The 2000-gallon above-ground tank was initially used to store waste oils and waste still bottoms from the distillation of tetrachloroethylene, 1,1,1-trichloroethane, and Stoddard solvent prior to disposal. Solvent still bottoms have not been stored in this unit since 1983. The 200-gallon sump was used to transfer waste oils from drums into the adjacent 2000-gallon tank. The 10,000-gallon underground tank was used as a spill containment tank, and as such, it was used for emergency spill protection for the nearby 2000-gallon above-ground tank and for a gasoline and diesel fuel storage, unloading, and transfer area. There are three gasoline and diesel fuel tanks located in close proximity to the spill containment tank. Because of the use of this tank as a spill interceptor, the hazardous wastes it contains are waste oils, oil-contaminated water, and sludge, with all three having trace amounts of solvents (tetrachloroethylene, Stoddard solvent, and 1,1,1-trichloroethane) which would meet the description of F001 and D001 waste. Prior to implementation of closure operations, the project manager will determine which wastes are in inventory and utilize the standard operating procedures to arrange for their transportation and appropriate disposal.

I-1c(4) Schedule for Closure

Partial closure of the tank storage area is not anticipated. However, implementation of this plan will allow partial closure of the storage area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received Agency approval. The proposed schedule for closure is shown in Figure I-13. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third-party operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1c(5) Inventory Disposal, Removal, or Decontamination of Equipment

Upon initiation of this closure plan, the manager will arrange for transportation and disposal of the stored wastes. The hazardous wastes will

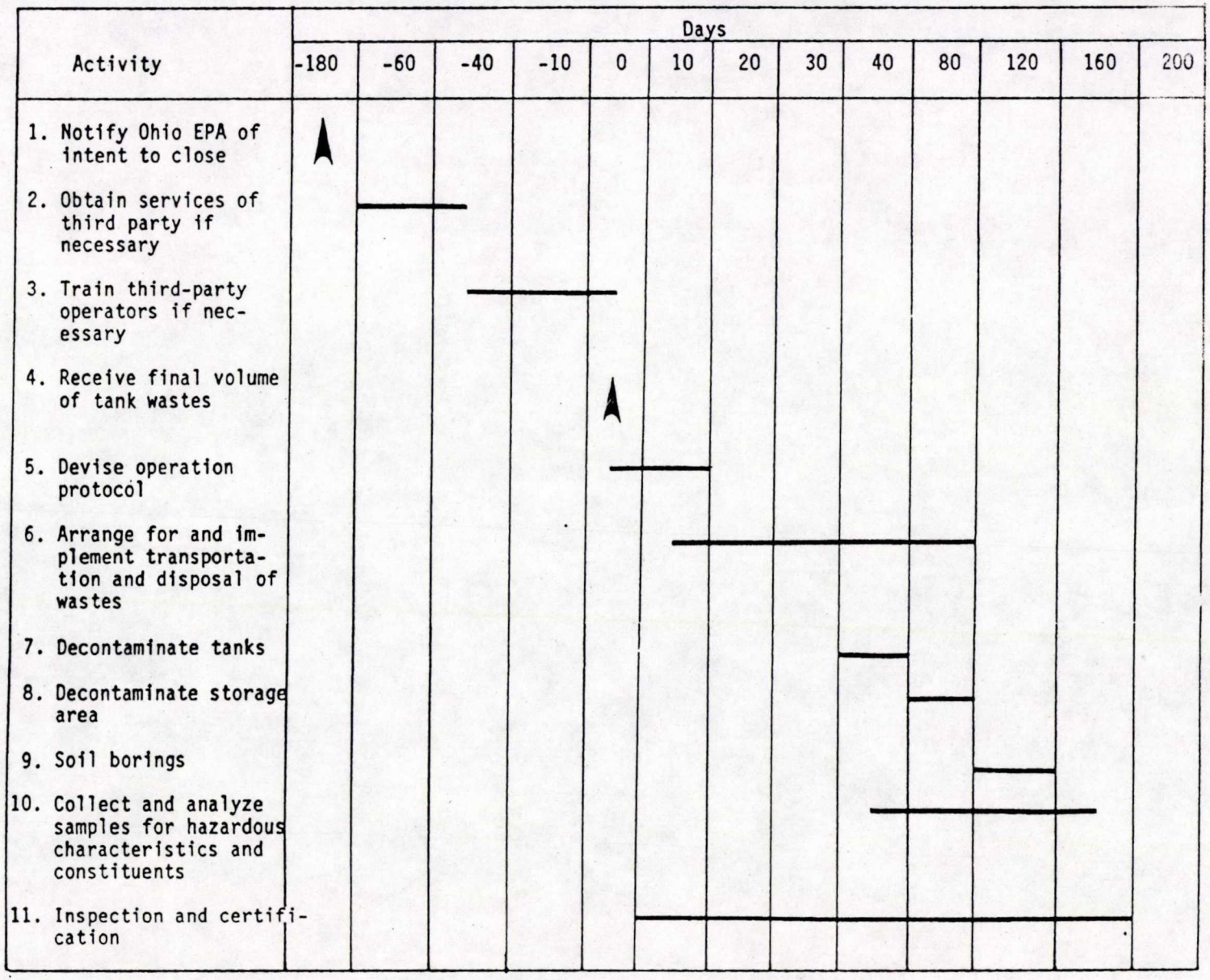


Figure I-13. Closure schedule for Building 4 tank storage area.

be transported off-site for recycle or disposal at RCRA approved hazardous waste facilities. The maximum extent of tasks that could be required to dispose of all stored hazardous wastes adjacent to Building 4 are listed below:

- Sample each different waste type
- Send samples to selected RCRA approved facilities
- Receive approval of RCRA approved disposal facilities for treatment/disposal
- Schedule dates for waste shipment
- Ship the wastes

Following removal of the wastes, the storage area will first be dry swept with collected materials being placed in a 55-gallon drum. The 2000-gallon tank will be high pressure cleaned with hot soapy water and rinsed with hot water at least three times. A representative sample of the final rinse solution for the tank system will be collected and analyzed for the compounds listed below. Decontamination procedures will be repeated, if necessary, until there is no more than 1 mg/liter of indicator constituents present in the rinseate as referenced in the State Closure Plan Review Guidance Document. The analytical methods and acceptable concentrations listed below will be used:

Analysis	Analytical method*	Acceptable concentration
Flash point	1010 or 1020	>140°F
Volatile organics		
1,1,1-Trichloroethane	8240	1 mg/liter
Tetrachloroethylene	8240	1 mg/liter

* Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. November 1986, 3rd Edition, U.S. EPA SW-846.

Harrison Radiator has decided to clean close the 10,000-gallon underground tank in-place. The interior of the underground tank will be high-pressure cleaned with hot soapy water and rinsed three times with high-pressure hot water. Representative samples of the final rinse solution from the tank will be collected and analyzed for the compounds listed below. Decontamination procedures will be repeated, if necessary, until there is no more than 1 mg/liter of indicator constituents shown above and as referenced in

the State Closure Plan Review Guidance Document. The analytical methods and acceptable concentrations referenced above will be used.

Following decontamination of the tanks the remainder of the storage area will be decontaminated. The floor, curbs, and 200-gallon sump will be washed with hot soapy water and rinsed at least three times. All wash and rinse water will be collected in a vacuum truck. After the wash and rinse solutions have been collected in the vacuum truck, the storage area will be rinsed once more with high pressure water. A representative sample of the final rinse water will be collected and analyzed for the compounds listed previously for tank decontamination. Decontamination procedures will be repeated until there is no more than 1 mg/liter of indicator constituents in the rinseate as referenced in the State Closure Plan Review Guidance Document. The analytical methods delineated above for tank decontamination samples will be utilized.

All wash water and rinse solutions will be collected by a vacuum truck and transported to the facility's wastewater pretreatment plant. All cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at RCRA regulated facilities.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 4030 gallons of wash and rinse water will be generated during the closure of the Building 4 tank storage area.

The following equipment will be necessary to successfully close the Building 4 tank storage area:

- Brooms and scoops
- Personal protection devices and clothing
- Vacuum truck
- Shot blasting unit
- High pressure hoses
- Safety devices
- Forklift
- Sampling devices
- Detergent

I-1c(6) Soil Survey and Removal

To determine whether the soil that lies below the containment pad and asphalt driveway and surrounds the underground tank is contaminated, four soil borings are proposed around the tank. The four borings will be sampled at a 12-foot depth.

The borings will be drilled using an auger drilling rig and conventional 4½-inch-i.d. hollow-stem augers. Soil samples will be collected at the specified depths using a 2-inch-diameter, 2-foot-long split-spoon sampling device.

In collecting all split-spoon soil samples, plastic sheeting will be placed on the ground to protect sampling equipment from potential contamination. After decontaminating the sampling device by 1) tap water rinse, 2) deionized water rinse, 3) dilute hydrochloric acid rinse, 4) deionized water rinse, 5) methanol, and 6) deionized water rinse, the drill rods will be attached to the split-spoon and positioned at the desired sampling depth. The split-spoon will be driven the necessary distance using the sliding hammer or other suitable power. Following the removal of the split-spoon from the ground, the sample will be cut with a decontaminated knife such that lengths sufficient to provide approximately 300 grams of sample per sample container will be produced. The soil sample will then be placed in an appropriately labeled sample container, and the container placed in a cooler and recorded into both the field data book and the chain-of-custody record. This process will be repeated until all samples have been obtained from all sampling locations.

Two 4-ounce, wide-mouth jars will be used to contain the sample aliquot for analysis of the volatile organic compounds. One 4-ounce, wide-mouth glass jar will be used to contain the sample aliquot for flash point.

The analytical methods and acceptable concentrations listed below will be used on all soil samples:

Analysis	Analytical method*	Acceptable concentration
Flash point	1010 or 1020	>140°F
Volatile organics		
Tetrachloroethylene	8010 or 8240	PQL**
1,1,1-Trichloroethane	8010 or 8240	PQL**

* Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. November 1986, 3rd Edition, U.S. EPA SW-846.

** Practical Quantitation Limit as specified by the High Level Soil and Sludge Matrix in SW-846.

The sample containers will be labeled to include sample location, depth, date and time, person collecting the sample, and any other pertinent information.

Chain-of-custody seals will be placed on all sample-shipping containers (coolers) prior to shipment. The seal numbers will be recorded in the field log book. Upon receipt of the samples, the laboratory sample custodian will inspect and record the integrity of the seal and seal number. The seal number will be verified with the field log book. Any discrepancies will be documented in the laboratory and facility files. Standard QA/QC data (i.e., blanks, spikes, etc.) will be reported with the results.

If the analytical results of the soil surrounding the tank show contamination above the accepted level, Harrison Radiator intends to excavate and dispose of all contaminated soil at a RCRA regulated facility. The exterior of the tank will be decontaminated using the same procedures described for the inside of the tank. However, if the soil has been contaminated to the extent that all contaminated soils cannot be practically removed or decontaminated, the contingent closure and post-closure plan will be implemented.

I-1c(7) Contingent Closure Plan

In the event clean closure cannot be accomplished, this contingent closure plan will be implemented and the Building 4 10,000-gallon underground tank will be closed in place as a landfill. This section is submitted in response to the requirements of O.A.C. 3745-67-28 and 40 CFR 265.197(b).

This contingent closure plan identifies all steps that will be necessary to close the storage unit at the end of its operating life. The contingent post-closure plan provides for thirty years of post-closure care, consisting of maintenance and monitoring.

Harrison Radiator will maintain a copy of the approved contingent closure and contingent post-closure plan and all revisions to each plan on site until certification of closure completeness has been submitted and accepted by Ohio's Environmental Protection Agency (OEPA) and the U.S. Environmental Protection Agency (U.S. EPA). Harrison Radiator will notify the agencies at least 180 days prior to the date final closure is expected to begin. Upon completion of either closure or contingent closure, Harrison Radiator will submit to the Director of OEPA and the Region V U.S. EPA Administrator certification by both a representative of Harrison Radiator and an independent registered professional engineer that the facility unit has been closed in accordance with the provisions of either of the approved closure plans. Harrison Radiator intends to implement clean closure as the first option.

Harrison Radiator stored tetrachloroethylene, 1,1,1-trichloroethane, and Stoddard solvent in the Building 4 10,000 gallon underground tank. If, after implementation of the closure plan, contamination is above the accepted levels in the soil surrounding the tank, and not all contaminated soils can be practically removed or decontaminated, this contingent closure plan will be implemented.

I-1(c)7(a) Closure Performance Standard

This contingent closure plan is designed to ensure that in the event clean closure of the underground storage tank at Building 4 cannot be accomplished, the wastes left in place as a landfill will be managed in such a manner that eliminates threats to human health or the environment and post-closure escape of hazardous waste, leachate, contaminated runoff or hazardous waste decomposition products to the groundwater, surface water, soils, or air.

I-1(c)7(b) Partial Closure Activities

Partial closure is not anticipated for this unit. Any wastes left in place as a landfill will be closed as described in this plan.

I-1(c)7(c) Maximum Waste Inventory

As specified in the closure plan, all D001 and F001 waste from this storage unit will be withdrawn and disposed of at approved RCRA regulated disposal facilities. Therefore, should Harrison Radiator implement this

contingent closure plan, all wastes will have already been removed to the extent practicable. The maximum waste inventory would then be the residual waste level left within the soil surrounding the tank. The maximum waste inventory is therefore unknown at this time.

I-1(c)7(d) Inventory Removal, Disposal of Contaminated Equipment

Inventory removal and disposal of contaminated equipment will be performed as specified in Harrison Radiator's closure plan. The tank, ancillary equipment, and appurtenances will be decontaminated prior to implementation of this contingent closure plan. Hazardous wastes or waste constituents that cannot be removed will be closed in place as a landfill.

I-1(c)7(e) Closure of Disposal Units

If Harrison Radiator cannot accomplish clean closure as outlined in the closure plan, contaminated soils will be left in place. Ground-water monitoring and reporting will be implemented. Installation of a "cap" or final cover to preclude the leaching of hazardous wastes or waste constituents through soils and into ground water will also be implemented.

I-1(c)7(f) Cover Design

Harrison Radiator intends to use the existing concrete above the tank as a cap or final cover. All holes in the concrete remaining from soil borings will be filled. In the event that large cracks or gaps are present in the existing concrete, a Type K concrete cap cover will be placed over the existing storage tank and surrounding area if contingent closure becomes necessary. The design of the final cover will be such that precipitation will not permeate the cover, precluding the leaching of wastes or waste constituents into ground water.

The basic function of the cap system is to provide a long-term barrier, minimizing migration of contaminants off-site. The Type K cover will be designed to be as maintenance-free as possible and to minimize shrinkage and cracking. Water stops and water-tight expansion material will be used in all construction and expansion/construction joints. An appropriate sub-base will be used to minimize settlement.

The concrete cover will be reinforced and at least six inches thick. A non-slip seal coat on top of the concrete layer will be applied to prevent possible spalling and cracking due to environmental conditions.

The cap will have the following design criteria: 1) it would be able to support tanks and heavy equipment used at Harrison Radiator, 2) the hydraulic conductivity of the cap will be less than 1×10^{-7} cm/s, and 3) the cap will be sloped to provide drainage for run-on and run-off.

I-1(c)7(g) Minimization of Liquid Migration

All liquid wastes will be removed as specified in the closure plan. Therefore, liquid wastes will not be present within this storage unit. Precipitation, run-on, and run-off migration is eliminated by using the concrete cover as an impermeable cap. The cap will preclude the migration of liquids into the waste disposal area.

I-1(c)7(h) Maintenance Needs

The concrete cap will act as a final cover, and maintenance needs will be minimized by using the design criteria list in Section I-1(b)7(f).

I-1(c)7(i) Drainage and Erosion

Cover erosion will not occur at this facility unit, as the concrete cap is impervious to precipitation, run-on, and run-off. Drainage into the soils under the cap will not occur. Because drainage into the soils will not occur, drainage layer clogging will not occur.

I-1(c)7(j) Settlement and Subsidence

The concrete cap will be designed such that settlement and subsidence will be minimized or eliminated.

I-1(c)7(k) Cover Permeability

The concrete cap will be impervious to rainfall and other forms of precipitation. The design of the cap is such that the hydraulic conductivity of the concrete will be less than 1×10^{-7} cm/s.

I-1(c)7(l) Freeze-Thaw Effects

The average depth of frost penetration in this area is approximately 32 inches. Freezing and thawing should not adversely effect the concrete cover. If freezing and thawing adversely effects the concrete cover, remedial measures will be taken immediately after the discovery of any defect.

I-1(c)7(m) Schedule for Closure

Contingent closure will begin within 30 days of determining whether implementation of this contingent closure plan is necessary. The proposed schedule for contingent closure is shown in Figure I-14.

I-1(c)7(n) Extension for Closure Time

Harrison Radiator does not request an extension for closure time.

I-1d Closure Plan for Building 24 Drum Staging Area

I-1d(1) Closure Performance Standard

This closure plan is designed to ensure that the Building 24 drum staging area will be closed in such a manner that further maintenance and controls are minimized or eliminated to prevent threats to human health and the environment, and to prevent post closure escape of hazardous waste, leachate, contaminated run-off or hazardous waste decomposition products to the ground water, surface water, atmosphere, or soils.

I-1d(2) Partial Closure and Final Closure Activities

Harrison Radiator does not anticipate partial closure of the drum staging area. However, the procedures described herein will allow management to partially close the area if deemed appropriate.

Building 24 has one drum staging area (Figures I-2 and I-7). Incompatible wastes are not staged in this staging area. The maximum extent of operations during the active life of the staging area includes:

- Eighty-four 55-gallon drums for a total of 4620 gallons
- The operating record delineating the contents of the drums

I-1d(3) Maximum Waste Inventory

The maximum waste inventory in the staging area at any given time during the operating life of the facility includes 84 drums of D007 waste for a total of 4620 gallons.

Each drum will have been labeled and entered into the waste tracking system. This system provides the information necessary for proper handling and disposal. Upon implementation of closure operations, the project manager

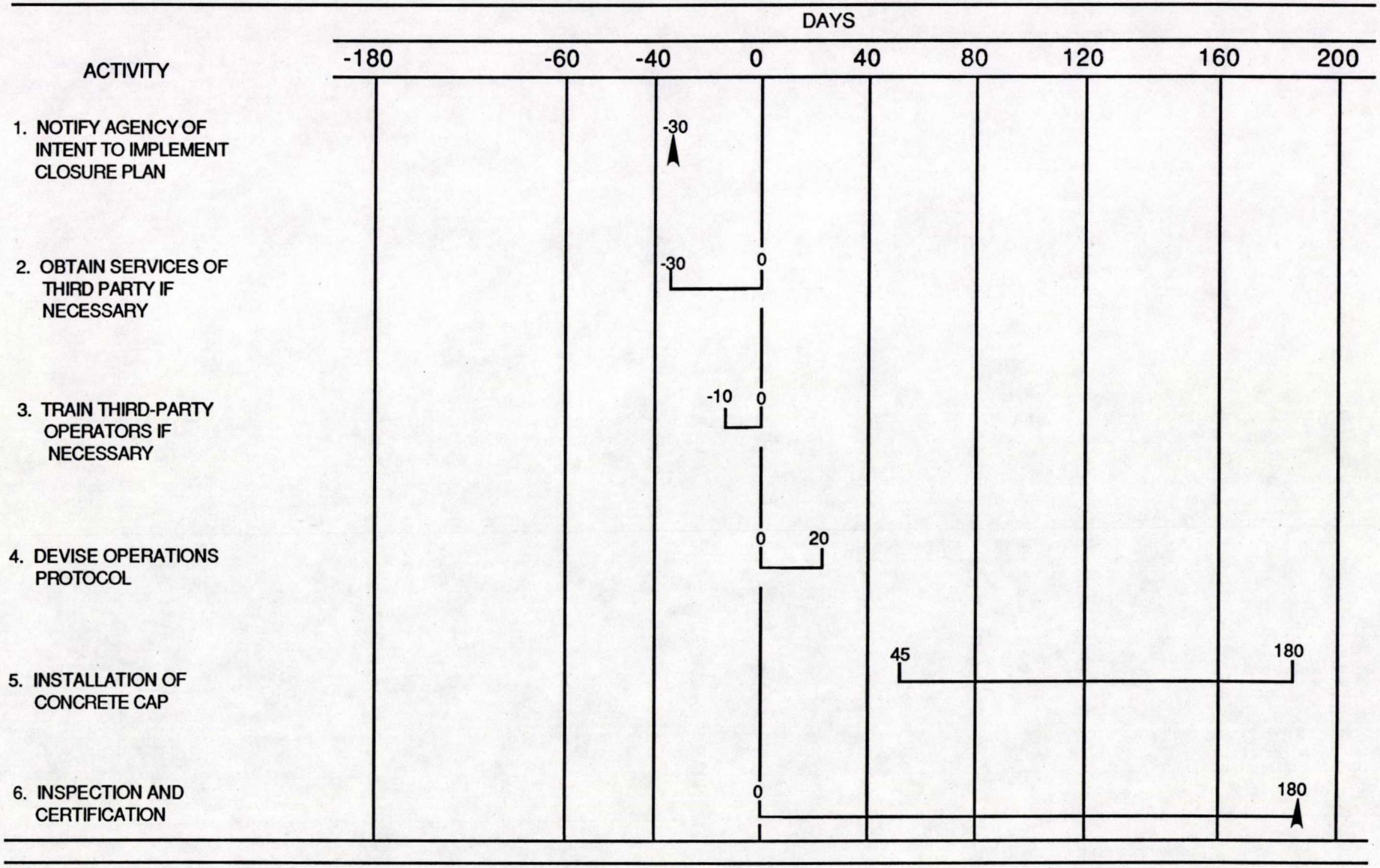


Figure I-14. Contingent closure schedule for Building 4 tank storage area.

will determine the volume of wastes in inventory and utilize the standard operating procedures to arrange for their transportation and disposal.

I-1d(4) Schedule for Closure

Partial closure of the drum staging area is not anticipated. However, implementation of this plan will allow partial closure of the staging area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received agency approval. The proposed schedule for closure is shown in Figure I-15. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third party operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1d(5) Inventory Disposal, Removal, or Decontamination of Equipment

Upon initiation of this closure plan, the manager will arrange for transportation and disposal of the staged wastes. The hazardous wastes will be transported off-site for disposal at RCRA approved hazardous waste facilities. The maximum extent of tasks that could be required to dispose of all stored hazardous wastes in the Building 24 drum staging area are listed below:

- Sample the waste (only D007 is stored in the drum staging area)
- Send samples to selected RCRA approved facilities
- Receive approval of RCRA approved disposal facilities for treatment/disposal
- Schedule dates for waste shipment
- Ship the wastes

Following removal of the wastes, the staging area will first be dry swept with collected materials being placed in a 55-gallon drum. The floor will be washed with hot soapy water and rinsed at least three times. All wash water and rinse water will be flushed to the decanting area floor drain and enter the facility's wastewater pretreatment plant.

All contaminated cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at RCRA regulated

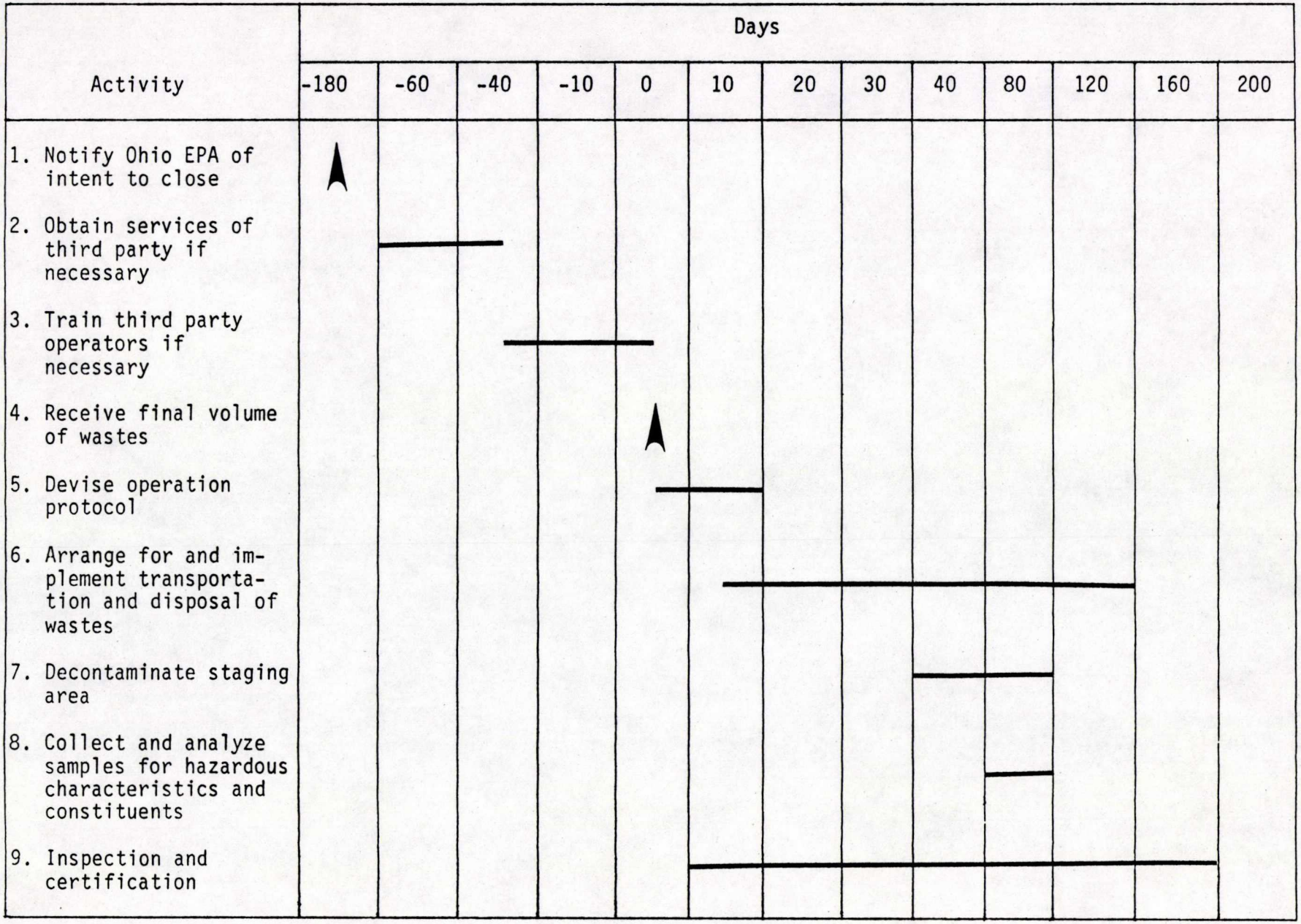


Figure I-15. Closure schedule for Building 24 drum staging area.

facilities. After the wash and rinse solutions have been routed into the decanting area floor drain, the staging area will be rinsed once more with high pressure water. A representative sample of the final rinse water will be collected and analyzed for total chromium. Decontamination procedures will be repeated until there is no more than the acceptable concentration (shown below) present in the rinseate. The analytical method listed below will be utilized.

Analysis	Analytical method*	Acceptable concentration
EP toxicity:		
Chromium	6010, 7190, or 7191	5 mg/liter

* Test Methods for Evaluating Solid Wastes. Physical/Chemical Methods. November 1986, 3rd Edition, U.S. EPA SW-846.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 865 gallons of wash and rinse water will be generated during the closure of the Building 24 drum staging area.

The following equipment will be necessary to successfully close the Building 24 drum staging area:

- Brooms and scoops
- Personal protection devices and clothing
- Drums
- Detergent
- High pressure hoses
- Safety equipment
- Forklift
- Sampling equipment

I-1d(6) Soil Survey and Removal

The drum staging area is located in Building 24 and is not near any exposed soil. Therefore, following decontamination, soil borings will not be taken in and around the Building 24 drum staging area.

I-1e Closure Plan for Building 24 Drum Storage Area

I-1e(1) Closure Performance Standard

This closure plan is designed to ensure that the Building 24 drum storage area will be closed in such a manner that further maintenance and

controls are minimized or eliminated to the extent necessary to prevent threats to human health and the environment, and to prevent post closure escape of hazardous waste, leachate, contaminated run-off or hazardous waste decomposition products to the ground water, surface water, atmosphere, or soils.

I-1e(2) Partial Closure and Final Closure Activities

Harrison Radiator does not anticipate partial closure of the drum storage area. However, the procedures described herein will allow management to partially close the area if deemed appropriate.

Building 24 has a drum storage area in the Northwest corner, on the second floor (Figures I-2 and I-8). RCRA waste D007 is the only waste stored in this area. The maximum extent of operations during the active life of the storage area includes:

- Eighty-four 55-gallon drums for a total of 4620 gallons
- The operating record delineating the contents of the drums

I-1e(3) Maximum Waste Inventory

The maximum waste inventory in the storage area at any given time during the operating life of the facility includes 84 drums of D007 waste for a total of 4620 gallons.

Each drum will have been labeled and entered into the waste tracking system. This system provides the information necessary for proper handling and processing. Upon implementation of closure operations, the project manager will determine the volume of wastes in inventory and utilize the standard operating procedures to arrange for their transportation and disposal.

I-1e(4) Schedule for Closure

Partial closure of the drum storage area is not anticipated. However, implementation of this plan will allow partial closure of the storage area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received agency approval. The proposed schedule for closure is shown in Figure I-16. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third party

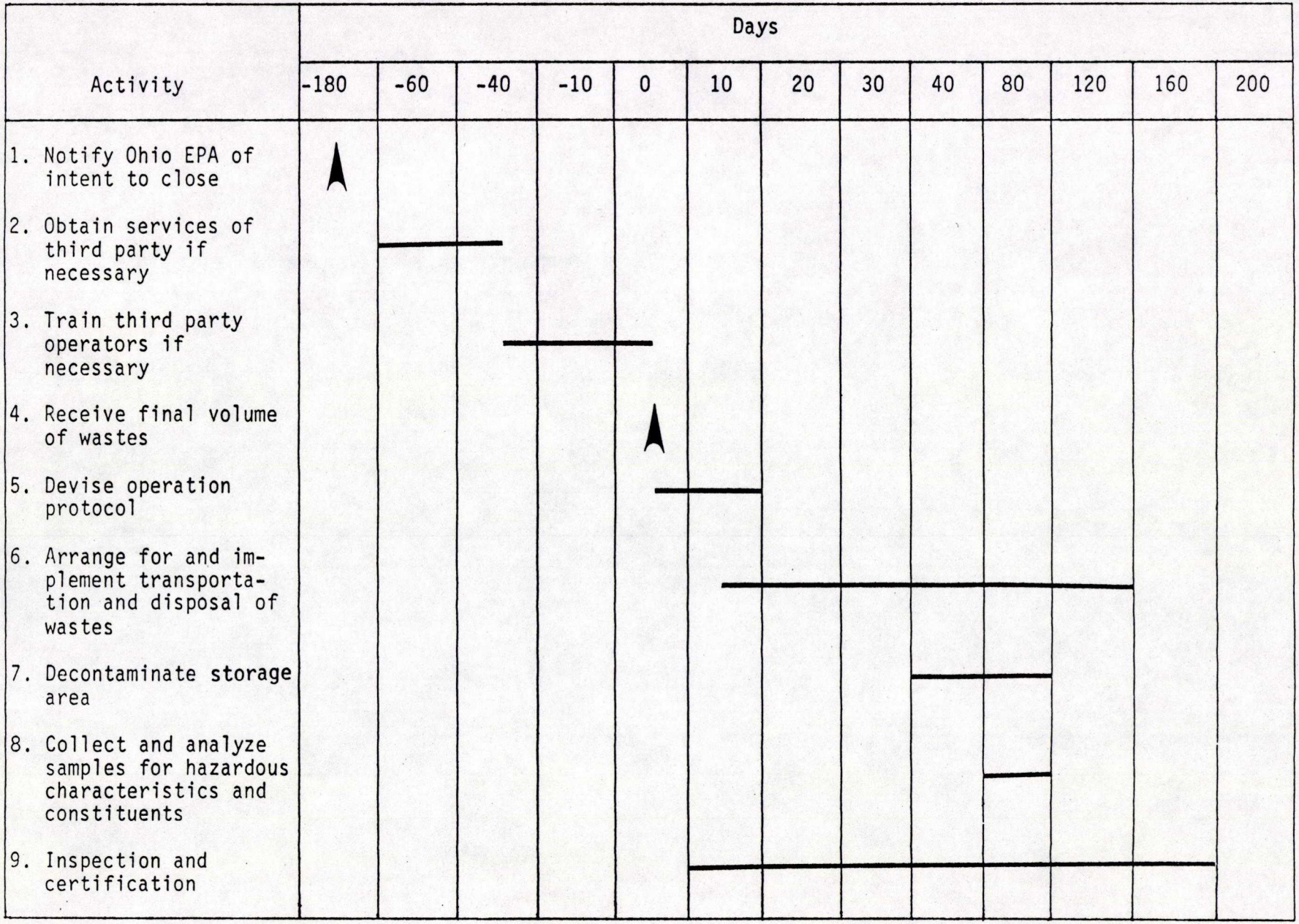


Figure I-16. Closure schedule for Building 24 storage area.

operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1e(5) Inventory Disposal, Removal, or Decontamination of Equipment

Upon initiation of this closure plan, the manager will arrange for transportation and disposal of the stored wastes. The hazardous wastes will be transported off-site for disposal at RCRA approved hazardous waste facilities. The maximum extent of tasks that could be required to dispose of all stored hazardous wastes in the Building 24 drum storage area are listed below:

- Sample the waste (only D007 is stored in the Building 24 drum storage area)
- Send samples to selected RCRA approved facilities
- Receive approval of RCRA approved disposal facilities for disposal
- Schedule dates for waste shipment
- Ship the wastes

Following removal of the wastes, the storage area will first be dry swept with collected materials being placed in a 55-gallon drum. The floor will be washed with hot soapy water and rinsed at least three times. All wash water and rinse water will be collected in a vacuum truck and then transferred to the facility's wastewater pretreatment plant. All contaminated cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at RCRA regulated facilities. After the wash and rinse solutions have been collected by the vacuum truck, the storage area will be rinsed once more with high pressure water. A representative sample of the final rinse water will be collected and analyzed for total chromium. Decontamination procedures will be repeated until there is no more than the acceptable concentration (shown below) present in the rinseate. The analytical method listed below will be utilized.

Analysis	Analytical method*	Acceptable concentration
EP toxicity:		
Chromium	6010, 7190, or 7191	5 mg/liter

* Test Methods for Evaluating Solid Wastes. Physical/Chemical Methods. November 1986, 3rd Edition, U.S. EPA SW-846.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 470 gallons of wash and rinse water will be generated during the closure of the Building 24 drum storage area.

The following equipment will be necessary to successfully close the Building 24 drum storage area:

- Brooms and scoops
- Personal protection devices and clothing
- Drums
- High pressure hoses
- Safety equipment
- Forklift
- Sampling equipment
- Detergent
- Vacuum truck

I-1e(6) Soil Survey and Removal

The drum storage area is located on the second floor of Building 24 and is not near any exposed soil. Therefore, following decontamination, soil borings will not be taken in and around the Building 24 drum storage area.

I-1f Closure Plan for Building 5 Container Storage Area

I-1f(1) Closure Performance Standard

This closure plan is designed to ensure that the Building 5 container storage area will be closed in such a manner that further maintenance and controls are minimized or eliminated to prevent threats to human health and the environment, and to prevent post closure escape of hazardous waste, leachate, contaminated run-off or hazardous waste decomposition products to the ground water, surface water, atmosphere, or soils.

I-1f(2) Partial Closure and Final Closure Activities

Harrison Radiator does not anticipate partial closure of the container storage area. However, the procedures described herein will allow management to partially close the area if deemed appropriate.

Building 5 has one container storage area (Figures I-2 and I-9). Incompatible wastes are not simultaneously stored in this storage area. The maximum extent of operations during the active life of the storage area includes:

- Forty-eight 55-gallon drums for a total of 2,640 gallons
- The operating record delineating the contents of the drums

I-1f(3) Maximum Waste Inventory

The maximum waste inventory in the storage area at any given time during the operating life of the facility is 48 drums for a total of 2,640 gallons.

Each drum will have been labeled and entered into the waste tracking system. This system provides the information necessary for proper handling and processing. Wastes stored over the life of the storage area have included: D001, D002, D003, D005, D007, F001, F005, F011, U210, U044, and U228. Upon implementation of closure operations, the project manager will determine which wastes are in inventory and utilize the standard operating procedures to arrange for their transportation and disposal.

I-1f(4) Schedule for Closure

Partial closure of the container storage area is not anticipated. However, implementation of this plan will allow partial closure of the storage area. Harrison Radiator intends to implement this closure plan within 30 days after the plan has received agency approval. The proposed schedule for closure is shown in Figure I-17. Harrison Radiator does not anticipate the need for requesting more than 180 days to complete closure. However, it should be noted that if it becomes necessary to obtain the services of a third party operator and to train that operator, that effort must be initiated prior to receiving the final waste volume.

I-1f(5) Inventory Disposal, Removal, or Decontamination of Equipment

Upon initiation of this closure plan, the manager will arrange for transportation and disposal of the stored wastes. The hazardous wastes will be transported off-site for recycle or disposal at RCRA approved hazardous waste facilities. The maximum extent of tasks that could be required to dispose of all stored hazardous wastes in Building 4 are listed below:

- Sample each different waste type
- Send samples to selected RCRA approved facilities

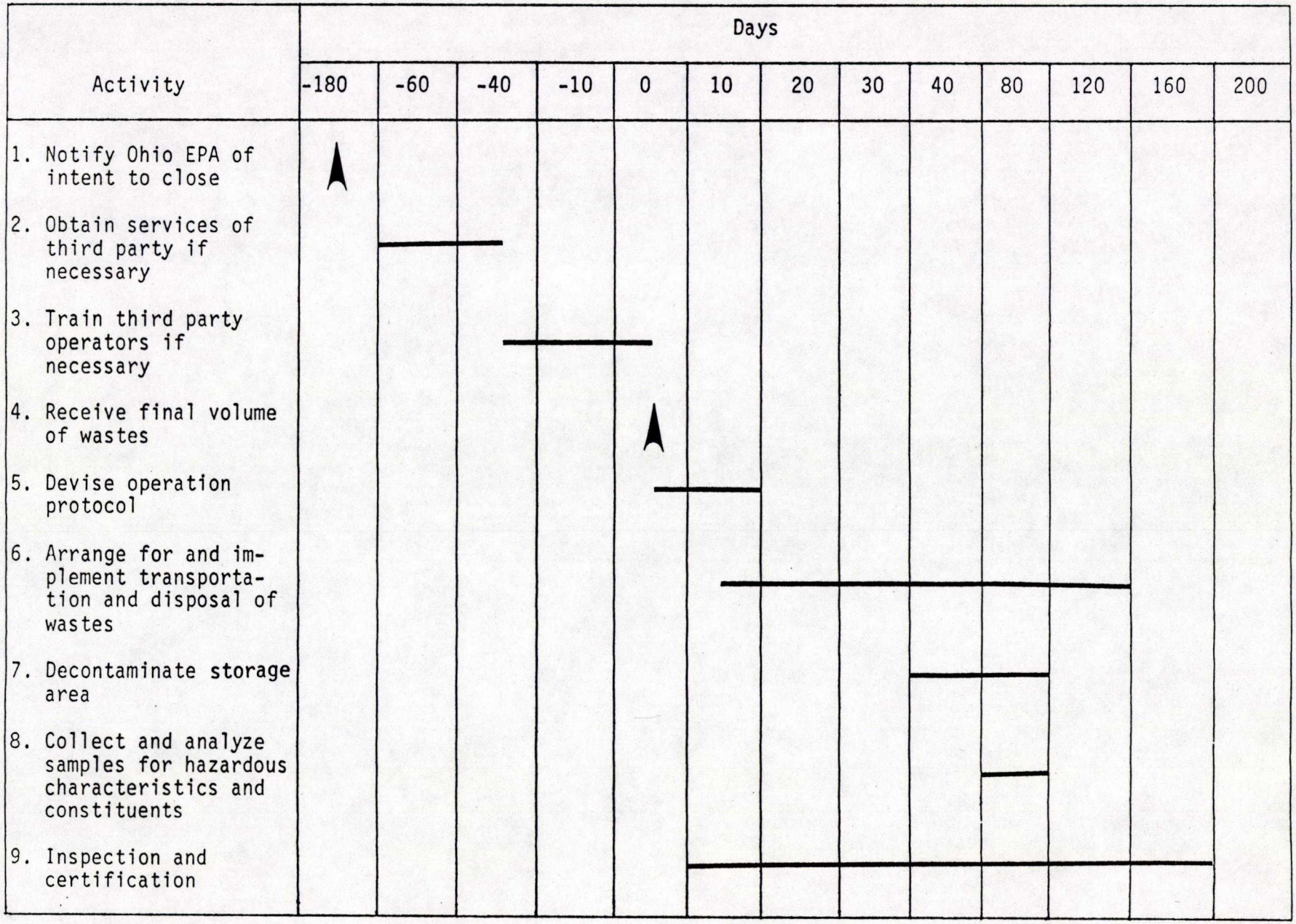


Figure I-17. Closure schedule for Building 5 storage area.

- Receive approval of RCRA approved disposal facilities for treatment/disposal
- Schedule dates for waste shipment
- Ship the wastes

Following removal of the wastes, the storage area will first be dry swept with collected materials being placed in a 55-gallon drum. The floor and curbs will be washed with hot soapy water and rinsed at least three times. All wash water and rinse water will be collected in a vacuum truck and then transferred to the facility's wastewater pretreatment plant. All contaminated cleaning materials (rags, mops, protective clothing, etc.) will be placed in 55-gallon drums and disposed of at RCRA regulated facilities. After the wash and rinse solutions have been collected by the vacuum truck, the storage area will be rinsed once more with high-pressure water. A representative sample of the final rinse water will be collected and analyzed for the compounds listed below. Decontamination procedures will be repeated, if necessary, until there is no more than the acceptable concentrations (shown below) present in the rinseate as referenced in the State Closure Plan Review Guidance Document. The analytical methods listed below will be used.

Analysis	Analytical method*	Acceptable concentration
pH	9040	2.0 to 12.5
EP toxicity:		
Barium	6010, 7080	100 mg/liter
Chromium	6010, 7190, or 7191	5 mg/liter
Flash point	1010 or 1020	>140°F
Volatile organics		
1,1,1-Trichloroethane	8240	1 mg/liter
Tetrachloroethylene	8240	1 mg/liter
Chloroform	8240	1 mg/liter
Trichlorethylene	8240	1 mg/liter
Toluene	8240	1 mg/liter
Cyanide	9010	1 mg/liter

* Test Methods for Evaluating Solid Wastes. Physical/Chemical Methods (SW-846), U.S. EPA, 3rd Edition, November 1986.

All equipment used during closure will be decontaminated using the wash and rinse techniques or disposed of as a hazardous waste. It is estimated that 210 gallons of wash and rinse water will be generated during the closure of the Building 5 container storage area.

The following equipment will be necessary to successfully close the Building 5 container storage area:

- Brooms and scoops
- Personal protection devices and clothing
- Drums
- Vacuum truck
- High pressure hoses
- Safety equipment
- Forklift
- Sampling equipment
- Detergent

I-1f(6) Soil Survey and Removal

The container storage area is located in Building 5 and is not near any exposed soil. Therefore, following decontamination, soil borings will not be taken in and around the Building 5 area.

I-2 POST-CLOSURE PLAN

I-2a Contingent Post-Closure Plan for Building 7 Tank Storage Area

This contingent post-closure plan provides for 30 years of post-closure care, which consists of maintenance, inspection monitoring, and reporting in accordance with 40 CFR 270.14(b)(13) and 265.197.

Harrison Radiator will keep a copy of the post-closure plan on site at all times. Mr. John Ridd, Senior Engineer, is the contact person responsible for maintaining and updating the facility copy prior to closure and during the post-closure period. Whenever changes in operating plans or facility design, or events influence the effectiveness of this post-closure plan, it will be amended within 60 days.

I-2a(1) Ground-Water Monitoring and Reporting

Throughout the 30 years post-closure period, ground-water monitoring, including sampling, analysis and data review will continue as discussed below. The ground-water monitoring plan provides an outline of the ground-water quality assessment program in the event contamination is detected.

To sufficiently describe background conditions of the ground water unaffected by leakage from the tank and to describe the quality of water downgradient from the tank, it is proposed that one background well and three downgradient or detection wells be installed. These wells will be installed in the uppermost aquifer which consists of an areally extensive deposit of coarse-grained sand and gravel with localized zones of medium-grained sand to boulders.

The wells will be drilled using an auger drilling rig and conventional 4½-inch-i.d. hollow-stem augers. Soil samples will be collected at regular intervals via a 2-inch-diameter, 2-foot-long split-spoon sampling device. Soils will be described and logged in the field.

These wells will be constructed of threaded 2-inch-diameter PVC well casing attached to a 5- or 10-foot section of PVC well screen (0.010-inch slot). An artifical gravel pack consisting of washed quartz sand will be installed around and above the top of the well screen. A 1½- to 2-foot bentonite plug will be placed on top of the gravel pack, and the remaining annular space will be filled with a neat cement grout. A 4-inch-diameter casing with locking cap will be installed to protect the PVC casing extending above land surface. All wells will be developed for several hours by pumping and surging to set the gravel pack and to remove fine-grained material.

The ground water and selected soil samples will be collected from each well/borehole and sent to the laboratory for analysis. The ground water will be sampled quarterly during the first year of post-closure and semi-annually thereafter. Samples will be analyzed for pH, total organic carbon (TOC), total organic halogens (TOX), and specific conductance.

At the initiation of each sampling event ground-water levels will be measured with respect to the specified measuring point for each monitoring well. This will be accomplished by direct measurement with either an electronic water sensor or steel tape, which will be rinsed with distilled or deionized water and wiped dry prior to measuring each well.

Prior to obtaining a sample from the well, a bottom-filling bailer and haul line will first be thoroughly decontaminated with a five-step rinse program using methanol and distilled or deionized water, then used to evacuate a minimum of three standing-well volumes or to dryness. In the event that a monitor well is bailed dry prior to removing the three well-volume

minimum, it will be assumed that all stagnant water has been removed from the well casing and filter pack and recharge to the well will be collected as a sample as soon as the recharged volume is adequate for analysis requirements. All samples will be collected using a decontaminated, bottom-filling bailer.

Each sample will be placed directly into the appropriate sample containers. After sampling locking security caps will be replaced on all monitor wells immediately and will remain untampered until the next sampling event.

Sulfuric acid (1:1) will be added (to pH <2) to sample containers as a preservative for TOC and TOX. All sample containers will be chilled to 4°C. Each sample container will be clearly marked with the facility name or identification number, well number, date and time of collection, technician's name, and the preservatives added.

All samples will then be packed and sealed in protective containers and be transported by the sampler to a qualified laboratory for analysis. During transport the samples will be kept cool and out of direct light. Maintenance of strict chain-of-custody control will be provided samples as described below.

A permanent log book will be kept in which all pertinent field activities relating to the ground-water monitoring program will be recorded, such as dates and times of sampling, person(s) performing sampling, sample numbers, water level measurements, and any field observations.

The chain-of-custody form will provide an accurate written record tracing the possession and handling of the samples from collection through analysis. The field technician or sample collector will be responsible for the care and custody of the samples until properly transferred to the receiving laboratory or turned over to an assigned custodian. The samples will be kept in the possession of that individual or stored in a secure place until delivered to the receiving laboratory.

The chain-of-custody record will be initiated once the samples have been collected from the monitoring well. This record will be attached to or otherwise accompany the samples until they are received at the laboratory.

When transferring the samples, the transferee will sign and record the date and time on the chain-of-custody form. The first signature on the form will be the collector and the last signature on the form will be the laboratory representative. Standard QA/QC data (i.e., blanks, spikes, etc.) will be reported with the results.

All monitoring well samples will be analyzed for pH, TOC, total organic halogens, and specific conductance using analytical methods specified in SW-846, 3rd edition.

I-2a(2) Maintenance Activities and Frequencies

Throughout the post-closure care period, regular inspections by plant personnel will be conducted to ensure that the final cover and associated equipment and structures are properly maintained. Harrison Radiator is responsible for regular inspections of the final cover, ground-water monitoring wells, and benchmarks at the frequencies presented in Figure I-18. A log will be maintained of these inspections for a minimum of three years from the date of inspection. The log will indicate the name of the inspector, item of inspection, date and time of inspection, observations, and date and nature of remedial action(s) (Figure I-18).

I-2a(3) Final Cover

Maintaining the function and integrity of the cover material will primarily involve functions such as grout sealing cracks and reapplying seal coat materials. The final cover is designed to withstand heavy loads cracking. The seal coat materials will be applied as needed. For cost estimating purposes, the concrete shall be seal coated 3 times per year.

I-2a(4) Monitoring Wells and Benchmarks

Very little maintenance is expected to be performed on the monitoring wells and benchmarks during the post-closure care period. The monitoring wells will be inspected for plugging, damage to the concrete base, and damage to the lock each time samples are collected. The wells will be painted periodically to prevent corrosion, and to assist in well identification. The concrete bases will also be coated with concrete sealer to prevent spalling and cracking. The locks may periodically have to be replaced due to harsh weather conditions.

Date: _____

Time: _____

Inspector: _____

Item of inspection	Types of problems	Frequency of inspection	Observations	Remedial actions
Final cover	Spalling Cracking Seal coat deterioration Subsidence	Quarterly		
Lateral boundaries	Excessive drainage - plugging	Quarterly		
Monitoring wells	Corrosion of well casing Spalling and cracking of concrete base Damage to lock	Quarterly		
Benchmarks	Unable to locate	Annual		
Security fence and gate	Corrosion Damage to chain-link fence, or locks	Annual		

Figure I-18. Post-closure inspection report.

I-2a(5) Security

Security is currently maintained 24 hours a day. When the Harrison Radiator facility ceases operations, access to the closed areas will be restricted by the general security provisions of fencing and gates. The entire facility is enclosed within a chain-link fence.

I-2b Contingent Post-Closure Plan for Building 4 Tank Storage Area

This contingent post-closure plan provides for 30 years of post-closure care, which consists of maintenance, inspection monitoring, and reporting in accordance with 40 CFR 270.14(b)(13) and 265.197.

Harrison Radiator will keep a copy of the post-closure plan on site at all times. Mr. John Ridd, Senior Engineer, is the contact person responsible for maintaining and updating the facility copy prior to closure and during the post-closure period. Whenever changes in operating plans or facility design, or events influence the effectiveness of this post-closure plan, it will be amended within 60 days.

I-2b(1) Ground-Water Monitoring and Reporting

Throughout the 30-year post-closure period, ground-water monitoring, including sampling, analysis, and data review, will continue as discussed in the following paragraphs. The ground-water monitoring plan also provides an outline of the ground-water quality assessment program in the event contamination is detected.

To sufficiently describe background conditions of the ground water that has not been affected by leakage from the tank and to describe the quality of water downgradient from the tank for detection purposes, it is proposed that one background well and three downgradient or detection wells be installed. These wells will be installed in the uppermost aquifer which consists of an extensive deposit of coarse-grained sand and gravel with localized zones of medium-grained sand to boulders.

The wells will be drilled using an auger drilling rig and conventional 4½-inch-i.d. hollow-stem augers. Soil samples will be collected at regular intervals via a 2-inch-diameter, 2-foot-long split-spoon sampling device. Soils will be described and logged in the field.

These wells will be constructed of threaded 2-inch-diameter PVC well casing attached to a 5- or 10-foot section of PVC well screen (0.010-inch slot). An artificial gravel pack consisting of washed quartz sand will be installed around and above the top of the well screen. A 1½- to 2-foot bentonite plug will be placed on top of the gravel pack, and the remaining annular space will be filled with a neat cement grout. A 4-inch-diameter casing with locking cap will be installed to protect the PVC casing extending above land surface. All wells will be developed for several hours by pumping and surging to set the gravel pack and to remove fine-grained material.

The ground water and selected soil samples will be collected from each well/borehole and sent to the laboratory for analysis. The ground water will be sampled quarterly during the first year and semi-annually thereafter. Samples will be analyzed for pH, TOC, TOX, specific conductance, and any volatile organics that may be associated with the underground tank.

At the initiation of each sampling event, ground-water levels will be measured with respect to the specified measuring point for each monitoring well. This will be accomplished by direct measurement with either an electronic water sensor or steel tape, which will be rinsed with distilled or deionized water and wiped dry prior to measuring each well.

Prior to obtaining a sample from the well, a bottom-filling bailer and haul line will be thoroughly decontaminated with a five-step rinse program using methanol and distilled or deionized water, then used to evacuate a minimum of three standing-well volumes or to dryness. In the event that a monitoring well is bailed dry prior to removing the three-well-volume minimum, it will be assumed that all stagnant water has been removed from the well casing and filter pack, and recharge to the well will be collected as a sample as soon as the recharged volume is adequate for analysis requirements. All samples will be collected using a decontaminated, bottom-filling bailer.

Each sample will be placed directly into the appropriate sample containers. Immediately after sampling, locking security caps will be replaced on all monitoring wells and will remain untampered with until the next sampling event.

Sulfuric acid (1:1) will be added (to pH <2) to all sample containers as a preservative for TOC and TOX. All other sample containers will be chilled

to 4°C. Each sample container will be clearly marked with the facility name or identification number, well number, date and time of collection, technician's name, and the preservatives added.

All samples will then be packed and sealed in protective containers and transported by the sampler to a qualified laboratory for analysis. During transport, the samples will be kept cool and out of direct light. Maintenance of strict chain-of-custody control will be provided for the samples as described below.

A permanent log book will be kept in which all pertinent field activities relating the ground-water monitoring program will be recorded, such as dates and times of sampling, person(s) performing sampling, sample numbers, water level measurements, and any field observations.

The chain-of-custody form will provide an accurate written record tracing the possession and handling of the samples from collection through analysis. The field technician or sample collector will be responsible for the care and custody of the samples until they are properly transferred to the receiving laboratory or turned over to an assigned custodian. The samples will be kept in the possession of that individual or stored in a secure place until delivery to the receiving laboratory.

The chain-of-custody record will be initiated once the samples have been collected from the monitoring well. This record will be attached to or otherwise accompany the samples until they are received at the laboratory. When transferring the samples, the transferee will sign and record the date and time on the chain-of-custody form. The first signature on the form will be the collector and the last signature on the form will be the laboratory representative. Standard QA/QC data (i.e., blanks, spikes, etc.) will be reported with the data.

All monitoring well samples will be analyzed for pH, TOC, total organic halogens, specific conductance, and volatile organics using analytical methods specified in "Test Methods for Evaluating Solid Waste", Physical Chemical Methods (SW 846), U.S. Environmental Protection Agency, November 1986, 3rd edition.

I-2b(2) Maintenance Activities and Frequencies

Throughout the post-closure care period, regular inspections by plant personnel will be conducted to ensure that the final cover and associated

equipment and structures are properly maintained. Harrison Radiator is responsible for regular inspections of the final cover, ground-water monitoring wells, and benchmarks at the frequencies presented in Figure I-19. A log will be maintained of these inspections for a minimum of three years from the date of inspection. The log will indicate the name of the inspector, item of inspection, date and time of inspection, observations, and date and nature of remedial action(s) (Figure I-19).

I-2b(3) Final Cover

Maintaining the function and integrity of the cover material will primarily involve functions such as grout sealing cracks and reapplying seal coat materials. The final cover is designed to withstand heavy loads cracking. The seal coat materials will be applied as needed. For cost estimating purposes, the concrete shall be seal coated 3 times per year.

I-2b(4) Monitoring Wells and Benchmarks

Very little maintenance is expected to be performed on the monitoring wells and benchmarks during the post-closure care period. The monitoring wells will be inspected for plugging, damage to the concrete base, and damage to the lock each time samples are collected. The wells will be painted periodically to prevent corrosion, and to assist in well identification. The concrete bases will also be coated with concrete sealer to prevent spalling and cracking. The locks may periodically have to be replaced due to harsh weather conditions.

I-2b(5) Security

Security is currently maintained 24 hours a day. When the Harrison Radiator facility ceases operations, access to the tanks will be restricted by the general security provisions of fencing and gates. The entire facility is enclosed within a chain-link fence.

I-3 NOTICES REQUIRED FOR DISPOSAL FACILITIES

Within 90 days after contingent closure, Harrison Radiator will submit a survey plat to the Director of Ohio's Environmental Protection Agency and the local land authority. This survey plat will indicate the location and dimensions of the closed area with respect to permanently surveyed benchmarks

Date: _____

Time: _____

Inspector: _____

Item of inspection	Types of problems	Frequency of inspection	Observations	Remedial actions
Final cover	Spalling Cracking Seal coat deterioration Subsidence	Quarterly		
Lateral boundaries	Excessive drainage - plugging	Quarterly		
Monitoring wells	Corrosion of well casing Spalling and cracking of concrete base Damage to lock	Quarterly		
Benchmarks	Unable to locate	Annual		
Security fence and gate	Corrosion Damage to chain-link fence, or locks	Annual		

Figure I-19. Post-closure inspection report.

certified by a professional land surveyor. A record of the type, location, and estimated quantity of hazardous waste disposed of in the closed area will also be submitted to both parties.

Harrison Radiator will also record on the deed to the facility property that the land was used to manage hazardous wastes and the the property's use is restricted under O.A.C. 3745-66-19 in order to notify a potential purchaser.

I-4 CLOSURE COST ESTIMATES

The required cost estimate is subdivided into components paralleling Section I-1 of the closure plan. The cost estimates are dated August 1988. The estimates include all labor and equipment necessary to decontaminate, transport, treat, or dispose of the waste inventory and decontamination residues. The unit costs are fully loaded, including allowances for overhead and profit by a third-party operator. The unit costs are based on data from RCRA commercial disposal facilities and hazardous waste cleanup contractors. No salvage credits are included in the cost estimate. Required off-site RCRA facilities are within 250 miles and closure certification will be accomplished by both the operator and an independent registered professional engineer. The estimate is based on the premise that all of the activities will be performed as necessary to meet this schedule. Tables I-3 through I-10 are breakdowns of the closure cost. The cost to close these six areas under the worst-case scenario is estimated to be $761,881.

I-5 POST-CLOSURE COST ESTIMATE

The required cost estimate is subdivided into two contingent post-closure components. The cost estimates are dated August 1988. The estimates include all labor and equipment to monitor, inspect, and maintain the storage areas for 30 years. The unit costs are fully loaded, including allowances for overhead and profit by a third-party operator. The estimate will be adjusted annually (utilizing the appropriate implicit price inflation cost index) in the cost of January or whenever there is a change in the facility's operating plan. The estimate is based on the premise that all of the activities will be performed as necessary to meet this schedule. Tables I-11 and I-12 are breakdowns of the post-closure cost. The cost to monitor and maintain these two areas for 30 years under the worst-case scenario is estimated to be $377,501.

TABLE I-3. CLOSURE COST ESTIMATE FOR BUILDING 24 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations training and planning	80 h at $50/h	4,000
II. Decontamination and removal of 8 200-gal above-ground tanks		
A. Labor		
1. Foreman, Level 2	8 h at $33/h	264
2. Cleanup technicians, Level 2	16 h at $21/h	336
3. Equipment operator	4 h at $30/h	120
B. Equipment		
1. Backhoe	1 day at $142/day	142
2. Steam hoses	1 day, 200 ft at $30/50 ft/day	120
3. Vacuum truck	1 day at $700/day	700
4. Sampling equipment	1 day at $30/day	30
5. Personal protective equipment, Level C	2 man-days at $62/day	124
6. 55-gal drums	1 drum at $35/drum	35
C. Decontamination residue, wash, and rinse disposal	400 gal at $0.004 gal for wastewater pretreatment	2
	1 55-gal drum at $250/drum for incineration of low-Btu waste	250
1. Laboratory	8 samples at $380/sample	3,040
2. Transportation (1 truck)	$3.5/loaded mile, 250 miles	875
III. Concrete floor removal		
A. Labor		
1. Foreman, Level 2	32 h at $33/h	1,056
2. Laborers, Level 2	96 h at $21/h	2,016
3. Equipment operator	32 h at $30/h	960

(continued)

TABLE I-3 (continued)

Activity description	Unit data	Cost, $
B. Equipment		
1. Air compressor	1 week at $1000/week	1,000
2. Two air hammers	1 week at $100/week ($50/week/air hammer)	100
3. Backhoe or bobcat	1 week at $567/week	567
4. Cut-off concrete saw (if reinforced concrete)	1 week at $100/week	100
5. Walk-behind concrete saw	1 week at $300/week	300
6. Miscellaneous hand tools		500
C. Disposal of concrete, 13 yd^3 if contaminated		
1. Disposal costs (assumed to be hazardous)	13 yd^3 at $150/$yd^3$	1,950
2. Transportation (2 trucks)	$3.5/loaded mile, 250 miles	1,750
3. Laboratory	8 concrete wipe samples at $380/sample	3,040
IV. Excavation and removal of underground soil		
A. Labor		
1. Foreman, Level 2	40 h at $33/h	1,320
2. Laborers, Level 2	120 h at $21/h	2,520
3. Equipment operator	40 h at $30/h	1,200
B. Equipment		
1. Backhoe or bobcat	1 week at $567/wk	567
2. Personal protective equipment, Level C	15 man-days at $62/day	930
3. 55-gal drums	2 drums at $35/drum	70

(continued)

TABLE I-3 (continued)

Activity description	Unit data	Cost, $
C. Decontamination residue disposal	Samples prior to incineration, 1 sample at $500	500
	160 yd^3 of soil at $1700/$yd^3$ for incineration	272,000
	2 55-gal drums at $250/drum for incineration of low-Btu waste	500
1. Transportation (27 trucks)	$3.50/loaded mile, 250 miles	23,625
V. Cutting, pulling, and decontamination of tanks		
A. Labor		
1. Foreman	40 h at $33/h	1,320
2. Cleanup technicians, Level 2	80 h at $21/h	1,680
3. Two welders	80 h at $60/h	4,800
4. Equipment operator	40 h at $30/h	1,200
B. Equipment		
1. Backhoe or bobcat	1 week at $567/week	567
2. Miscellaneous equipment,		750
3. Vacuum truck	1 week at $2,050/week	2,050
4. Sampling equipment	5 days at $30/day	150
5. Steam hoses	5 days , 200 ft at $30/50 ft/day	600
6. Personal protective equipment, Level B	15 man-days at $100/day	1,500
7. 55-gal drums	2 drums at $35/drum	70
C. Disposal of decontamination residue, wash, and rinse	5,750 gal at $0.004 gal for wastewater pretreatment	23
	2 55-gal drums at $250/drum for incineration of low-Btu waste	500

(continued)

TABLE I-3 (continued)

Activity description	Unit data	Cost, $
1. Laboratory	3 samples at $380/sample	1,140
2. Transportation (1 truck)	$3.50/loaded mile, 250 miles	875
VI. Decontamination of concrete vault		
A. Labor		
1. Foreman, Level 2	8 h at $33/h	264
2. Cleanup technicians, Level 2	24 h at $21/h	504
3. Equipment operator	8 h at $30/h	240
B. Equipment		
1. Vacuum truck	2 days at $700/day	1,400
2. Steam hoses	2 day, 200 ft, at $30/50 ft/day	240
3. Personal protective equipment, Level C	3 man-days at $62/day	186
4. Sampling equipment	3 days at $30/day	90
5. 55-gal drums	2 drums at $35/drum	70
C. Decontamination residue, wash, and rinse disposal	1,720 gal at $0.004/gal for wastewater pretreatment	7
	2 55-gal drums at $250/drum for incineration of low-Btu waste	500
1. Laboratory	1 sample at $380/sample	380
2. Transportation (1 truck)	$3.50/loaded mile, 250 miles	875
	Base cost - Subtotal	$348,590
VII. Mobilization	1% of base cost	3,485
VIII. P.E. inspection	3 weeks at $2500/wk	7,500
IX. Contingency	10% of base cost	34,859
X. Administration	10% of base cost	34,859
	Total	429,293

TABLE I-4. CLOSURE COST ESTIMATE FOR BUILDING 7 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations planning and training	40 h at $50/h	2,000
II. Inventory removal		
1. Waste in tanks	10,000 gal at $3/gal for incineration of low-Btu waste	30,000
2. Transportation (2 trucks)	$3.5/loaded mile, 250 miles	1,750
III. Decontamination		
A. Labor		
1. Foreman, Level 2	24 h at $33/h	792
2. Cleanup technicians, Level 2	48 h at $21/h	1,008
3. Equipment operator	8 h at $30/h	240
B. Equipment		
1. Vacuum truck	2 days at $700/day	1,400
2. Steam hoses	2 days, 200 ft at $30/50 ft/day	240
3. Backhoe	1 day at $142/day	142
4. Personal protection equipment, Level B	6 man-days at $100/day	600
5. Sampling equipment	3 days at $30/day	90
6. 55-gal drums	2 drums at $35/drum	70
C. Soil borings		
1. Drill 4 borings	4 borings at 10 ft each at $15/ft (+) one split-spoon ($15/sample) per boring + 2 h at $90/h, decontamination time	840
2. Analyze soil samples	4 soil samples analyzed for flash point at $100/sample	400

(continued)

TABLE I-4 (continued)

Activity description	Unit data	Cost, $
D. Decontamination residue, wash and rinse disposal	1,500 gal at $0.004/gal for wastewater pretreatment	6
	2 55-gal drums at $250/drum for incineration of low-Btu waste	500
1. Laboratory	1 sample at $100 sample	100
2. Transportation (1 truck)	$3.5/loaded mile, 250 miles	875
E. Disposal of soil, if contaminated	25 yd^3 at $1,700/yd for incineration	42,500
1. Transportation (4 trucks)	$3.5/loaded mile, 250 miles	3,500
	Base cost - subtotal	87,053
IV. Mobilization	1% of base cost	871
V. P.E. Inspection	3 days at $500/day	1,500
VI. Contingency	10% of base cost	8,705
VII. Administration	10% of base cost	8,705
	Total	106,834

TABLE I-5. CONTINGENT CLOSURE COST ESTIMATE FOR BUILDING 7 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations training and planning	8 h at $50/h	400
II. Disconnection and removal of piping, pouring and finishing of concrete cover over tank, filling of tank		
A. Labor		
1. Foreman, Level 2	12 h at $50/h	600
2. Laborers	36 h at $21/h	756
B. Materials		
1. Type K concrete	6.5 yd^3 at $60/$yd^3$	390
2. Bank run	50 yd^3 at $9/$yd^3$	450
3. Seal coat	2 gal at $20/gal	40
	Base cost - Subtotal	2,636
III. Mobilization	1% of base cost	26
IV. P.E. Inspection	1 day at $500/day	500
V. Contingency	10% of base cost	264
VI. Administration	10% of base cost	264
	Total	3,690

TABLE I-6. CLOSURE COST ESTIMATE FOR BUILDING 4 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

	Activity description	Unit data	Cost, $
I.	Operations planning and training	80 h at $50/h	4,000
II.	Inventory removal		
	1. Waste in tanks	12,200 gal at $3/gal for incineration of low-Btu waste	36,600
	2. Transportation (3 trucks)	$3.5/loaded mile, 250 miles	2,625
III.	Decontamination		
	A. Labor		
	1. Foreman, Level 2	40 h at $33/h	1,320
	2. Cleanup technicians, Level 2	240 h at $21/h	5,040
	3. Equipment operator	24 h at $30/h	720
	B. Equipment		
	1. Forklift	1 day at $103/day	103
	2. Vacuum truck	1 week at $2050/week	2,050
	3. Steam hoses	5 days, 200 ft at $30/ 50 ft/day	600
	4. Personal protection equipment,	15 man-days at $62/day (Level C)	930
		15 man-days at $100/day (Level B)	1,500
	5. 55-gallon drums	5 drums at $35/drum	175
	6. Sampling equipment	10 days at $30/day	300
	7. Backhoe	1 day at $142/day	142

(continued)

TABLE I-6 (continued)

	Activity description	Unit data	Cost, $
	C. Soil borings		
	1. Drill 4 borings	4 borings at 10 ft each at $15/ft + 1 split spoon $15/sample) per boring + 2 h at $90/h, decontamination time	840
	2. Analyze soil samples	4 samples at $380/sample	1,520
	D. Decontamination residue, wash, and rinse disposal	4030 gal at $0.004/gal for wastewater pretreatment	16
		4 55-gallon drums at $250/drum for incineration of low-Btu waste	1,000
	1. Laboratory	3 samples at $380/sample	1,140
	2. Transportation (1 truck)	$3.5/loaded mile, 250 miles	875
	E. Disposal of soil, if contaminated	25 yd^3 at $1700/$yd^3$ for incineration	42,500
	1. Transportation (4 trucks)	$3.5/loaded mile, 250 miles	3,500
		Base cost - Subtotal	107,496
IV.	Mobilization	1% of base cost	1,075
V.	P.E. Inspection	2 weeks at $2,500/week	5,000
VI.	Contingency	10% of base cost	10,749
VII.	Administration	10% of base cost	10,749
		Total	135,069

TABLE I-7. CONTINGENT CLOSURE COST ESTIMATE FOR BUILDING 4 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations training and planning	8 h at $50/h	400
II. Disconnection and removal of piping, pouring and finishing of concrete cover over tank, filling of tank		
A. Labor		
1. Foreman, Level 2	12 h at $50/h	600
2. Laborers	36 h at $21/h	756
B. Materials		
1. Type K concrete	6.5 yd^3 at $60/$yd^3$	390
2. Bank run	50 yd^3 at $9/$yd^3$	450
3. Seal coat	2 gal at $20/gal	40
	Base cost - Subtotal	2,636
III. Mobilization	1% of base cost	26
IV. P.E. Inspection	1 day at $500/day	500
V. Contingency	10% of base cost	264
VI. Administration	10% of base cost	264
	Total	3,690

TABLE I-8. CLOSURE COST ESTIMATE FOR BUILDING 24 DRUM STAGING AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations planning and training	40 h at $50/h	2,000
II. Inventory removal		
A. RCRA approved landfill evaluation fees	8 samples at $50/sample	400
B. Waste in drums	84 55-gallon drums at $75/drum to landfill	6,300
Transportation (2 trucks)	$3.5/loaded mile, 250 miles	1,750
III. Decontamination		
A. Labor		
1. Foreman, Level 2	30 h at $33/h	990
2. Cleanup technicians, Level 2	160 h at $21/h	3,360
3. Equipment operator	8 h at $30/h	240
B. Equipment		
1. Forklift	1 day at $103/day	103
2. Steam hoses	5 days, 200 ft at $30/ 50 ft/day	600
3. Personal protection equipment, Level C	10 man-days at $62/day	620
4. 55 gallon drums	2 drums at $35/drum	70
5. Sampling equipment	5 days at $30/day	150

(continued)

TABLE I-8 (continued)

	Activity description	Unit data	Cost, $
	C. Decontamination residue, wash, and rinse disposal	865 gal at $0.004/gal for wastewater pre-treatment	4
		1 55-gallon drum at $250/ drum for incineration low-Btu waste	250
	1. Laboratory	1 sample at $50/sample	50
	2. Transportation	$3.5/loaded mile, 250 miles	Included in Item II, B
		Base cost - Subtotal	16,887
IV.	Mobilization	1% of base cost	168
V.	P.E. Inspection	2 weeks at $2,500/week	5,000
VI.	Contingency	10% of base cost	1,689
VII.	Administration	10% of base cost	1,689
		Total	25,433

TABLE I-9. CLOSURE COST ESTIMATE FOR BUILDING 24 DRUM STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations planning and training	40 h at $50/h	2,000
II. Inventory removal		
A. RCRA approved landfill evaluation fees	8 samples at $50/sample	400
B. Waste in drums	84 55-gallon drums at $75/drum to landfill	6,300
Transportation (2 trucks)	$3.5/loaded mile, 250 miles	1,750
III. Decontamination		
A. Labor		
1. Foreman, Level 2	30 h at $33/h	990
2. Cleanup technicians, Level 2	160 h at $21/h	3,360
3. Equipment operator	8 h at $30/h	240
B. Equipment		
1. Forklift	1 day at $103/day	103
2. Vacuum truck	1 week at $2,050/week	2,050
3. Steam hoses	5 days, 200 ft at $30/ 50 ft/day	600
4. Personal protection equipment, Level C	10 man-days at $62/day	620
5. 55 gallon drums	2 drums at $35/drum	70
6. Sampling equipment	5 days at $30/day	150

(continued)

TABLE I-9 (continued)

Activity description	Unit data	Cost, $
C. Decontamination residue, wash, and rinse disposal	470 gal at $0.004/gal for wastewater pre-treatment	2
	1 55-gallon drum at $250/drum for incinera-tion of low-Btu waste	250
1. Laboratory	1 sample at $50/sample	50
2. Transportation	$3.5/loaded mile, 500 miles	Included in Item II, B
	Base cost - Subtotal	18,935
IV. Mobilization	1% of base cost	189
V. P.E. Inspection	2 weeks at $2,500/week	5,000
VI. Contingency	10% of base cost	1,893
VII. Administration	10% of base cost	1,893
	Total	27,910

TABLE I-10. CLOSURE COST ESTIMATE FOR BUILDING 5 CONTAINER STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations planning and training	40 h at $50/h	2,000
II. Inventory removal		
A. RCRA approved landfill evaluation fees	10 samples at $177/ sample	1,770
B. Waste in drums	48 55-gallon drums at $250/drum for mixed liquid/solid low-Btu waste	12,000
Transportation (1 truck)	$3.5/loaded mile, 250 miles	875
III. Decontamination		
A. Labor		
1. Foreman, Level 2	30 h at $33/h	990
2. Cleanup technicians, Level 2	160 h at $21/h	3,360
3. Equipment operator	8 h at $30/h	240
B. Equipment		
1. Forklift	1 day at $103/day	103
2. Vacuum truck	1 week at $2,050/week	2,050
3. Steam hoses	5 days, 200 ft at $30/ 50 ft/day	600
4. Personal protection equipment, Level C	10 man-days at $62/day	620
5. 55 gallon drums	2 drums at $35/drum	70
6. Sampling equipment	5 days at $30/day	150

(continued)

TABLE I-10 (continued)

Activity description	Unit data	Cost, $
C. Decontamination residue, wash, and rinse disposal	210 gal at $0.004/gal for wastewater pre-treatment	1
	1 55-gallon drum at $250/drum for incinera-tion of low-Btu waste	250
1. Laboratory	1 sample at $775/ sample	775
2. Transportation (1 truck)	$3.5/loaded mile, 250 miles	875
	Base cost - Subtotal	26,729
IV. Mobilization	1% of base cost	267
V. P.E. Inspection	2 weeks at $2,500/week	5,000
VI. Contingency	10% of base cost	2,673
VII. Administration	10% of base cost	2,673
	Total	37,342

TABLE I-11. POST-CLOSURE COST ESTIMATE FOR BUILDING 7 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations training and planning	40 h at $50/h	2,000
II. Concrete cover		
A. Seal coat application	2 gal at $20/gal per application, 1 time/year for 30 years	1,200
B. Inspection	2 h/inspection, 4 times/yr for 30 years at $19/h	4,560
III. Monitoring wells and benchmarks		
A. Inspection for corrosion, concrete base, and lock	$12/inspection, 4 times/yr for 30 years	1,440
B. Painting and concrete seal/repair	Every 10 years at $100/year serviced	300
C. Benchmark inspection	$12/inspection, 1 time/year for 30 years	360
D. Ground-water monitoring		
1. Well installation	4 wells at $2500/well	10,000
2. Ground-water sample collection	1 day at $40/day, 4 times/year for 30 years	4,800
3. Ground-water sample analysis	4 samples at $150/sample 4 times/year for 30 years	72,000
	Base cost - Subtotal	96,660
IV. Mobilization	1% of base cost	967
V. P.E. Inspection	2 weeks at $2,500/week	5,000
VI. Contingency	10% of base cost	9,666
VII. Administration	10% of base cost	9,666
	Total	121,959

TABLE I-12. POST-CLOSURE COST ESTIMATE FOR BUILDING 4 TANK STORAGE AREA
HARRISON RADIATOR - DAYTON
August 1988

Activity description	Unit data	Cost, $
I. Operations training and planning	40 h at $50/h	2,000
II. Concrete cover		
A. Seal coat application	2 gal at $20/gal per application, 1 time/year for 30 years	1,200
B. Inspection	2 h/inspection, 4 times/yr for 30 years at $19/h	4,560
III. Monitoring wells and benchmarks		
A. Inspection for corrosion, concrete base, and lock	$12/inspection, 4 times/yr for 30 years	1,440
B. Painting and concrete seal/repair	Every 10 years at $100/year serviced	300
C. Benchmark inspection	$12/inspection, 1 time/yr for 30 years	360
D. Ground-water monitoring		
1. Well installation	4 wells at $2500/well	10,000
2. Ground-water sample collection	1 day at $40/day, 4 times/year for 30 years	4,800
3. Ground-water sample analysis	4 samples at $380/sample, 4 times/year for 30 years	182,400
	Base cost - Subtotal	207,060
IV. Mobilization	1% of base cost	2,070
V. P.E. Inspection	2 weeks at $2,500/week	5,000
VI. Contingency	10% of base cost	20,706
VII. Administration	10% of base cost	20,706
	Total	255,542

OhioEPA
State of Ohio Environmental Protection Agency

P. Box 1049, 361 E. Broad Street
Columbus, Ohio 43266-1049
(614) 466-8565

Richard F. Celeste
Governor

February 23, 1987

Re: GMC/Harrison Radiator Division
US EPA ID No.: OHD017958604
Ohio Permit No.: 05-57-0256
Partial Closure Plan

GMC/Harrison Radiator Division
Attn: Robert E. Kerr
P.O. Box 824
Dayton, Ohio 45401

Dear Sir:

A public notice acknowledging the Ohio EPA's receipt of a partial closure plan for GMC/Harrison Radiator Division in Dayton, Ohio will appear the week of February 22, 1987 in the Dayton Daily News, Dayton, Ohio. The Director of the Ohio EPA will act upon the partial closure plan request following the close of the public comment period, March 27, 1987.

Copies of the partial closure plan will be available for public review at the Dayton & Montgomery County Public Library, 215 E. Third Street, Dayton, Ohio 45402 and the Ohio EPA, Southwest District Office, 7 E. Fourth Street, Dayton, Ohio 45402.

Please contact me at (614) 466-1578, if you have any questions concerning this matter.

Sincerely,

James F. Flautt

James F. Flautt
Data Management Unit
Program Planning and Management Section
Division of Solid & Hazardous Waste Management

JFF/dhs

cc: George Hamper, U.S. EPA, Region V
Rebecca Strom, U.S. EPA, Region V
Dan Fisher, OEPA, DSHWM, TA&ES
Dick Robertson, OEPA, DSHWM, SWDO

1013R

Montgomery County

PUBLIC NOTICE

RECEIPT OF HAZARDOUS WASTE PARTIAL CLOSURE PLAN

For: GMC/Harrison Radiator Division, US EPA ID No.: OHD017958604, Ohio Permit No.: 05-57-0256, 300 Taylor Street, Dayton, Ohio 45401. The Ohio Environmental Protection Agency (Ohio EPA) is hereby giving notice of the receipt of a Hazardous Waste Facility Partial Closure Plan involving a storage tank, sump, and spill interceptor for the above referenced facility.

Copies of the facility's partial Closure Plan will be available for public review at the Dayton & Montgomery County Public Library, 215 E. Third Street, Dayton, Ohio 45402 and the Ohio EPA, Southwest District Office, 7 E. Fourth Street, Dayton, Ohio 45402.

Comments concerning the partial Closure Plan should be submitted before March 27, 1987 to: James F. Flautt, Div. of Solid & Hazardous Waste Mgmt., Program Planning and Management Section, P.O. Box 1049, 361 E. Broad Street, Columbus, Ohio 43216-1049.

HARRISON

Harrison Radiator
Division of General Motors Corporation
P.O. Box 824
Dayton, Ohio 45401

December 15,1986

Mr. Thomas E. Crepeau
Program Planning & Management Section
Division of Solid & Hazardous Waste Management
Ohio Environmental Protection Agency
361 E. Broad Street
Columbus, Ohio 43216-1049

RE: Closure Plan for Hazardous Waste Tank, Waste Tank Sump, and Bldg. 4 Spill Interceptor
GMC Harrison Radiator - Dayton Plant
300 Taylor Street
Dayton, Ohio 45401
EPA ID# OHD017958604

Dear Sir:

Enclosed is a partial closure plan covering three hazardous waste units at the GMC Harrison Radiator - Dayton Plant located in Dayton, Ohio. These units are identifed as a hazardous waste tank (Facility #5), the waste tank sump (Facility #6), and the Building 4 spill interceptor (Facility #26). Also enclosed is a revised Part A application reflecting removal of these facilities from the permit. This plan is submitted in accordance with 40 CFR Part 265.112 and OAC 3745-55-12.

If you have any questions, please contact John Ridd on (513) 455-4408.

Sincerely,

Robert E. Kerr
Ass't. Superintendent
Plant Engineering

PARTIAL CLOSURE PLAN
FOR THE
GENERAL MOTORS CORPORATION
HARRISON RADIATOR DIVISION - DAYTON PLANT

FACILITY ID NUMBER: OHD017958604

FACILITY ADDRESS: 300 TAYLOR STREET
DAYTON, OHIO 45401

FACILITY CONTACT: ROBERT E. KERR
ASS'T. SUPERINTENDENT
PLANT ENGINEERING
P.O. BOX 824
DAYTON, OHIO 45401
(513) 455-4424

DECEMBER 15, 1986

CLOSURE PLAN
GMC HARRISON RADIATOR - DAYTON PLANT

Hazardous Waste Tank, Waste Tank Sump, and Building 4 Spill Interceptor (Areas 5, 6, and 26)

DESCRIPTION

This area consists of one 2,000 gallon above ground fibercast waste tank, an associated 200 gallon concrete sump, and a 10,000 gallon underground concrete spill containment tank.

The 2,000 gallon waste tank was originally used for storage of waste oils and waste still bottoms from the distillation of tetrachloroethylene, 1,1,1-trichloroethane, and stoddard solvent, prior to disposal. Since 1983, solvent still bottoms have not been stored in this unit. The 200 gallon sump was used to transfer waste oils from drums into the adjacent waste tank. The Building 4 Spill Interceptor was used for emergency spill protection for the waste tank and a gasoline storage, unloading, and transfer area.

LOCATION

These tanks are located in a canopy-covered area immediately north of Building 4. These units are identified as hazardous waste facility nos. 5, 6, and 26 in Area B on the facility layout. (See Figure 1).

DESCRIPTION OF WASTE

The 2,000 gallon waste tank contains oily residue with trace amounts of solvents which would meet the description of F001 listed waste. The 200 gallon sump and 10,000 gallon interceptor contain oil-contaminated water and sludge with trace amounts of the same solvents.

CLOSURE

All remaining liquids and residual sludge will be removed from the specified facilities using a vacuum tanker. If it is necessary to enter either of the tanks to aid in the removal of residue, appropriate confined space entry procedures will be followed. The liquid and residual sludge will be sampled and analyzed by a contract laboratory for the appropriate solvents. This material will be discharged to the Harrison Radiator - Dayton Plant wastewater pretreatment facility or hauled to an EPA approved contractor for disposal based upon the analytical results.

Each unit will then be filled with a detergent solution and allowed to soak for 24 hours. The detergent solution will then be removed and taken to the Harrison - Dayton wastewater pretreatment system for treatment and disposal.

Each unit will then be rinsed twice with clean water and the second rinse water sampled for analysis by a contract laboratory to determine that the decontamination is complete. The water will be tested for all solvents identified in the F001 listing and decontamination will be considered complete if the concentration of each parameter is less than 1.0 ppm. The rinse waters will also be taken to the Harrison - Dayton wastewater pretreatment system for treatment and disposal.

Once the unit decontamination has been completed, the surrounding areas will be washed and clean water rinsed.

After decontamination the waste tank and sump will be available for storage of any material other than a hazardous waste. The spill interceptor will still be used for emergency containment of any spill in the bulk gasoline storage, unloading, and transfer area.

When closure has been completed, certification by an independent Registered Professional Engineer that the units were closed in accordance with the plan will be submitted to the agency. The owner-operator will also certify that the closure was completed in accordance with the plan.

INVENTORY OF WASTE

These units are currently inactive with respect to hazardous waste activities. The 2,000 gallon waste tank is empty with only a film of oily residue. The waste tank sump currently contains approximately 100 gallons of oily water and sludge. The 10,000 gallon interceptor contains approximately 10,000 gallons of oil-contaminated water and sludge. An estimated 12,000 gallons of detergent solution and 24,000 gallons of rinse water will be used in the decontamination process.

DECONTAMINATION OF EQUIPMENT

All equipment used in the closure procedure will be detergent washed and clean water rinsed. The wastewaters will be discharged to the Harrison-Dayton wastewater pretreatment system for treatment and disposal.

CLOSURE SCHEDULE

Closure of the 2,000 waste tank (Facility #5) is planned to begin upon submission of the Closure Plan in December, 1986. The closure schedule consists of the following:

1. Removal of residue and detergent soaking - 2 days
2. Clean water rinsing and laboratory analysis to show decontamination is complete - 30 days

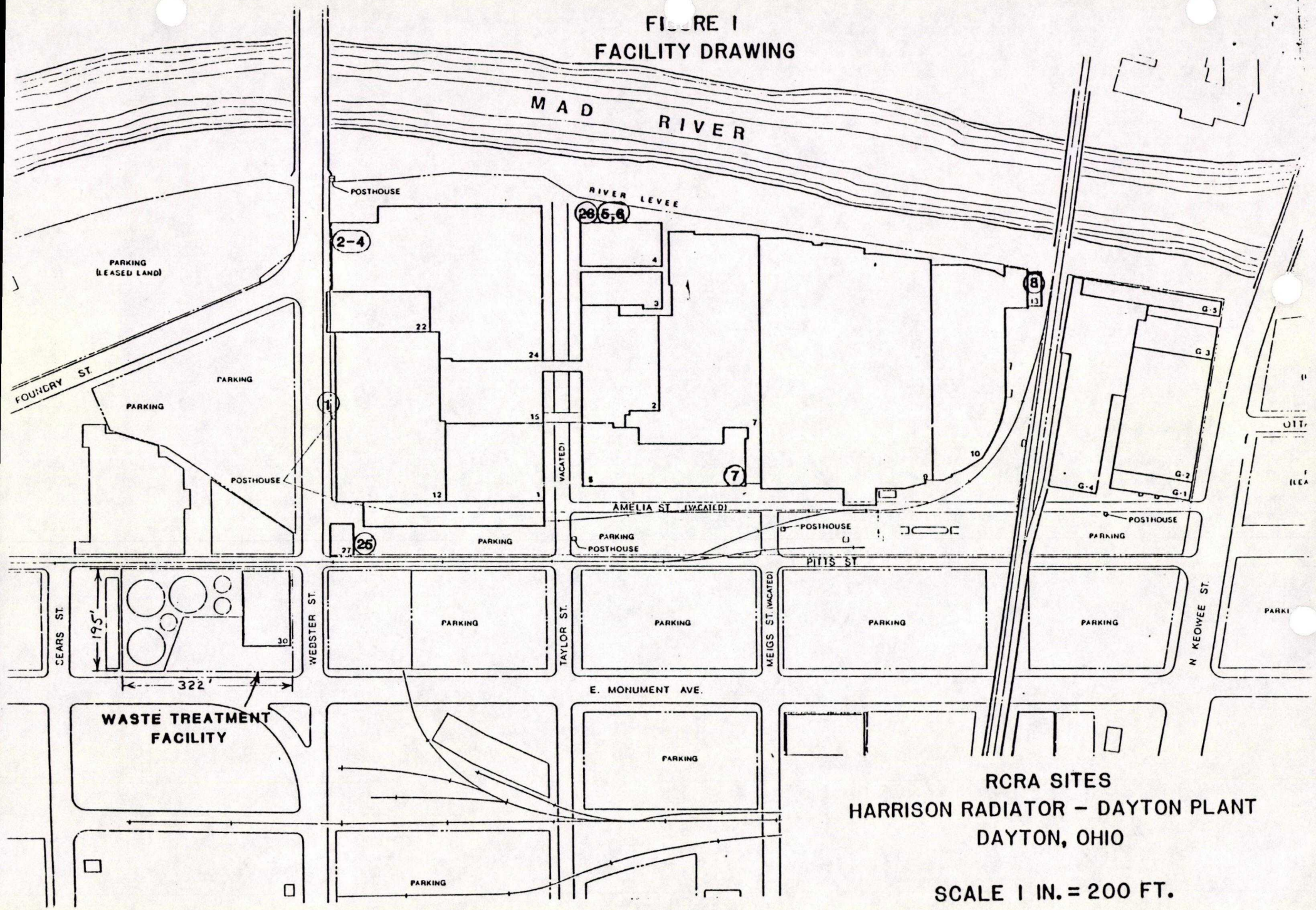
Closure of the 200 gallon waste tank sump (Facility #6) and the 10,000 gallon spill interceptor (Facility #26) is expected to begin (subject to change) during March, 1987. The closure schedule for these facilities consists of the following:

1. Removal of liquids and residuals - 30 days
2. Detergent soaking - 15 days
3. Clean water rinsing and laboratory analysis to show decontamination is complete - 30 days
4. Clean surrounding areas - 15 days

CLOSURE COST ESTIMATE

Transportation and Disposal of Residue	$3,000
Labor, Material, and Equipment	$2,400
Detergent and Rinse Water Disposal	$160
Laboratory Analyses	$750
Fee for Certification of Closure by an Independent Registered Professional Engineer	$800
Total	$7,110

FIGURE 1
FACILITY DRAWING



RCRA SITES
HARRISON RADIATOR – DAYTON PLANT
DAYTON, OHIO

SCALE 1 IN. = 200 FT.

(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F | O H D 0 1 7 9 5 8 6 0 4 | D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold—faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		NA
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP | G M C H A R R I S O N R A D I A T O R D A Y T O N P L A N T

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 K E R R R O B E R T A S S T S U P T P L T E N G	5 1 3 | 4 5 5 | 4 4 2 4

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P O B O X 8 2 4

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 D A Y T O N	O H	4 5 4 0 1

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

0 0 T A Y L O R S T R E E T

B. COUNTY NAME

M O N T G O M E R Y

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 D A Y T O N	O H	4 5 4 0 1	

EPA Form 3510-1 (6-80)

CONTINUE ON REVERSE

FORM 3 RCRA

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

S												T/A	C
F	O	H	D	0	1	7	9	5	8	6	0	4	1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

☐ 2. NEW FACILITY *(Complete item below.)*

C	YR.	MO.	DAY
8	75	01	01

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR.	MO.	DAY

FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code*(s)* in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C	DUP	T/A	C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B.1. AMOUNT (specify)	B.2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B.1. AMOUNT	B.2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 1	11,800	G		7				
2	S 0 2	36,000	G		8				
3					9				
4					10				

GMC HARRISON RADIATOR DIVISION-DAYTON PLANT

EPA FORM 3510-3

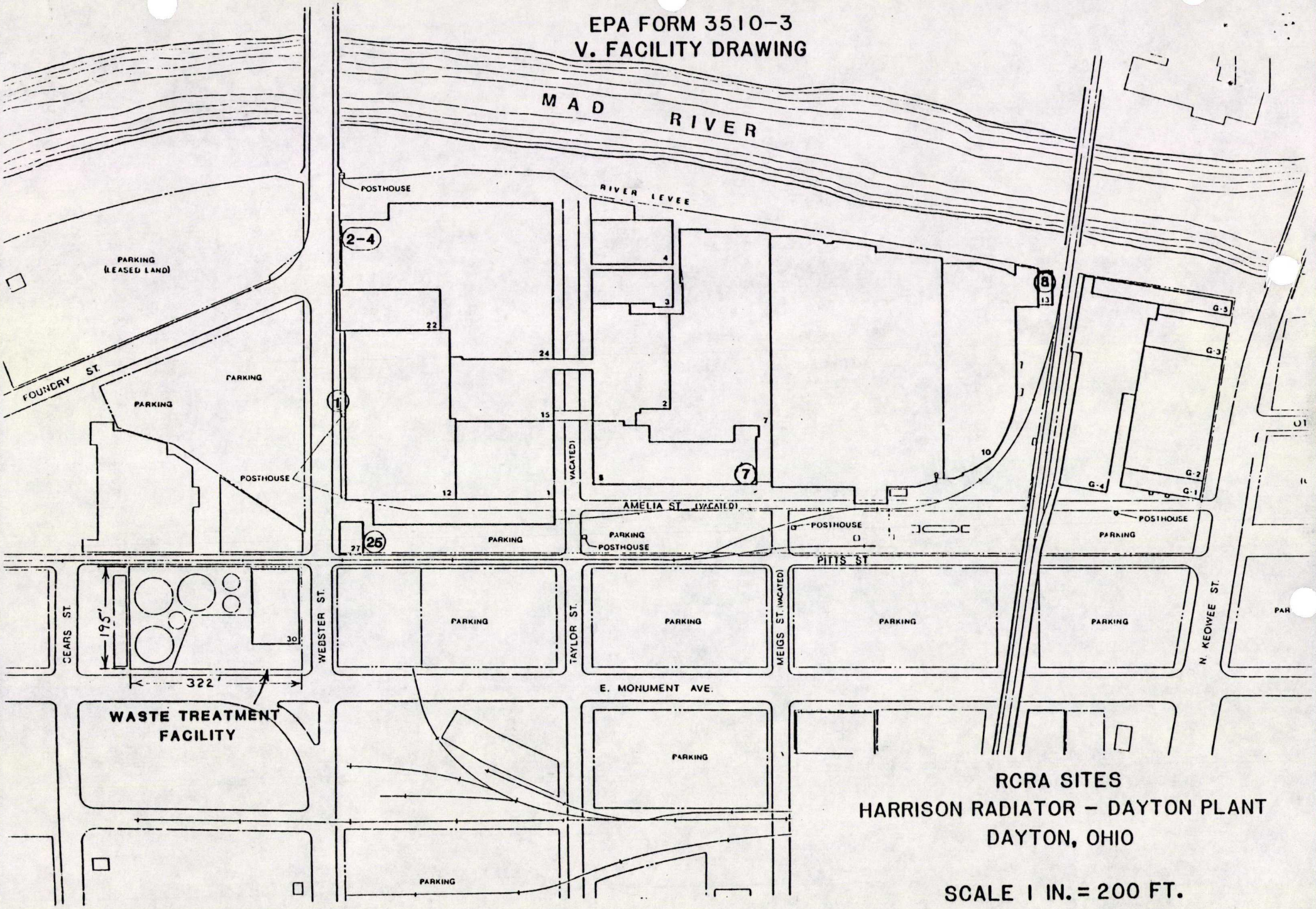
V. FACILITY DRAWING (CONT.)

ITEM	HAZARDOUS WASTE FACILITY	LOCATION
1	SOLVENT STORAGE TANK	WEST OF BLDG. 12
2	DIRTY SOLVENT STORAGE TANK	BLDG. 24 T-U/1-3
3	CLEAN SOLVENT STORAGE TANK	BLDG. 24 T-U/1-3
4	STILL BOTTOM SCRAP TANK	BLDG. 24 T-U/1-3
7	HAZARDOUS MATERIALS STORAGE CAGE	BLDG. 5 A-B/36-37
8	HAZARDOUS MATERIALS STORAGE CAGE	BLDG. 13
25	BLDG. 12 SPILL INTERCEPTOR	SW CORNER BLDG. 12

REVISED 12/15/86

/RIDD-8A

EPA FORM 3510-3
V. FACILITY DRAWING



RCRA SITES
HARRISON RADIATOR – DAYTON PLANT
DAYTON, OHIO

SCALE 1 IN. = 200 FT.

Revised 12/15/86

NOTE: Photocopy this page before complet[illegible] ou have more than 26 wastes to list. Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
W	OHD017958604	W	DUP 2 DUP

V. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F001	14,300	P	S01 S02	
2	F008	48,200	P	S01	
3	F010	5,700	P	S01	
4	F011	440	P	S01	
5	F017	142,560	P	S01	
6	D001	19,600	P	S01	
7	F017				Included With Above
8	D002	1,900	P	S01	
9	F017				Included With Above
10	F001	208,300	P	S02	
11	D010				Included With Above
12	D001				Included With Above
13	D001	660	P	S01	
14	F001	29,200	P	S02	
15	D001				Included With Above
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

EPA Form 3510-3 (6-80)

CONTINUE ON REVERSE

GMC-HARRISON RADAITOR DAYTON PLANT

EPA FORM 3510-1

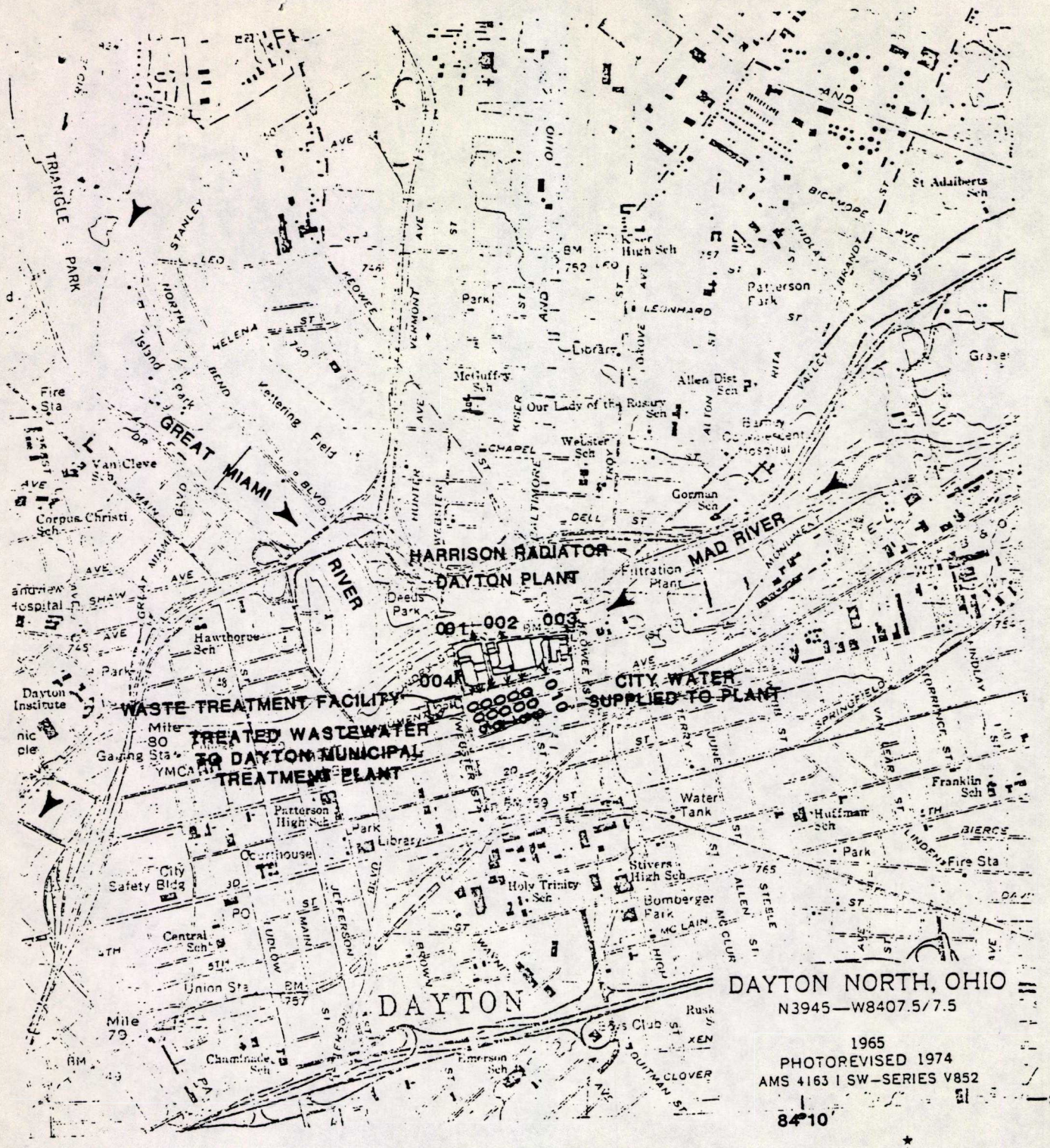
X. EXISTING ENVIRONMENTAL PERMITS (CONT.)

E. OHIO EPA AIR PERMITS

0857040029	P001	
	P002	
	P003	
	P006	
	P007	
	P008	L013
	P009	L015
	P010	L016 L017
	P011	L018 L019
	P012	L021
	P014	L030 L031
	P015	L022
	P018	L023
	P019	L026
	P020	L028
	P021	K001
	F001	K002 K003
	F002	K004

REVISED 12/15/86

/RIDD-8A



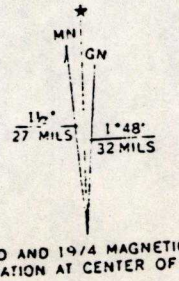
EPA FORM 3510-1

XI. LOCATION MAP

HARRISON RADIATOR - DAYTON PLANT

DAYTON, OHIO

QUADRANGLE LOCATION



UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

9-9-81